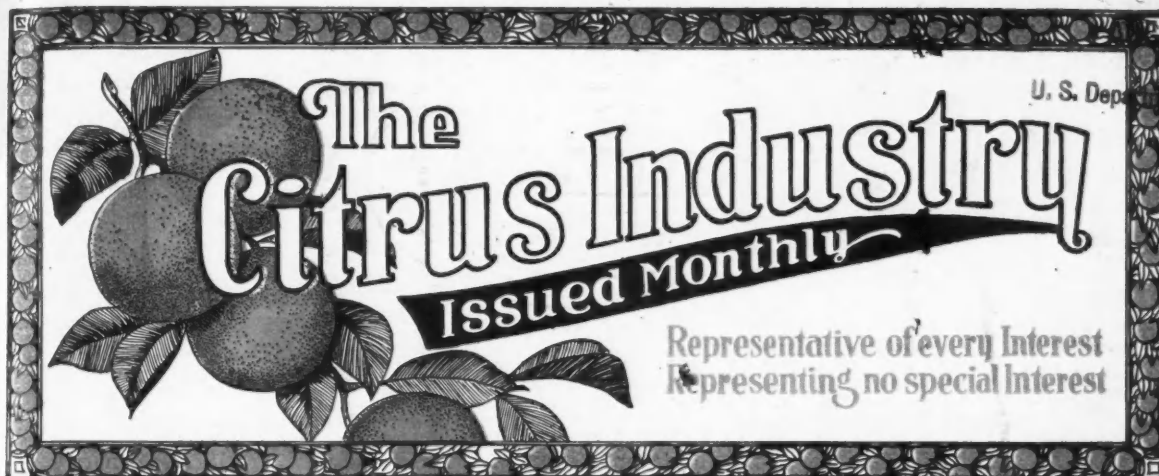


1925

U. S. Department of Agriculture



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TAMPA, FLA., AUGUST, 1925

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But no organization, is sufficient unto itself. And the American Fruit Growers Inc. takes this opportunity to express its appreciation of the cooperation of individual Florida growers, groups of growers, packing house managers, and all who have worked for and with this organization for the accomplishment of the goals towards which it is purposefully striving. Without your help, such degree of success as has already been achieved could not have been made.

Only with your continued assistance will the commercialized selling service of this organization advance to newer and greater heights of service, to the immediate and the ultimate greater advantage of all. Thus only can this great modern business firm continue to triumph, through merit of beneficial accomplishment.

Therefore, the American Fruit Growers Inc. thanks the readers of The Citrus Industry for the important part they have played in the past success of the AFG. With your continued help it will continue to grow ever greater and finer. And in turn, the American Fruit Growers Inc. pledges itself to exert even greater energy in the future to keep itself worthy of the confidence you have reposed in it.

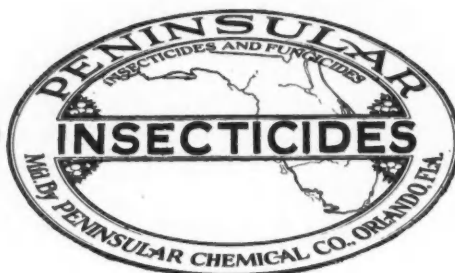
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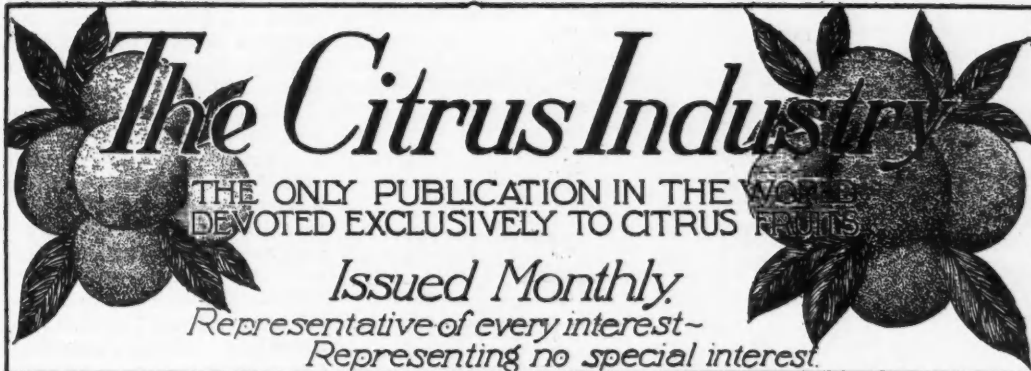
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Vol. 6

TAMPA, FLA., AUGUST, 1925

No. 8

# Soil Moisture Studies in Relation to Diseased Tree Conditions in Brevard County

Paper Presented to the Florida Horticultural Society by Albert O. Kay, Associate Drainage Engineer, U. S. Department of Agriculture

An examination of the conditions in the citrus growing sections of Brevard County, in the vicinity of Cocoa particularly, revealed the fact that the trees were suffering from a deficiency of moisture at certain seasons of the year, whereas at other times there were indications that excessive water was also affecting the trees. Following this examination investigations were begun to ascertain the soil moisture conditions in the groves during the year and the effectiveness of the rainfall in replenishing the soil moisture removed by evaporation and transpiration. These studies were commenced in July, 1923, and are still in progress.

Early in the investigations it was learned that at least 8 different soil types and 11 phases prevail in the areas planted to citrus, and that on all these types and phases the trees apparently suffered from either extreme of moisture—wet, or dry,—and that some trees were subjected to both extremes during the same year. In addition, it was noted that the most serious trouble—wilting trees—was most prevalent on the two predominating soil types—Norfolk series and the Gainesville series, of what might be termed the coquina phase—(that is, underlaid with coquina rock). Soils of the Norfolk series

are of the deep sand formation and occur principally on the higher or rolling land. The Gainesville soils are also on the relatively high land but underlaid with an undulating rock platform at depths varying from 6 inches to 5 feet or more below the surface, and pitted with pot-holes.

In the course of the investigations unexpectedly variable moisture conditions were revealed. They revealed an irregular depletion of the moisture whether the subsoil was deep or whether it was shallow and underlaid with rock. At times there was less moisture in the fifth foot of soil than in the top six inches; and, again, there was less moisture in the second and third foot than in the first or fifth. It was not unusual to find running dry sand at any depth down to five feet—or the depth to which the samples were obtained. These conditions were altogether surprising, and yet another feature would make them even more unusual. It was at first assumed that one set of samples taken at a tree would indicate an average moisture content around that tree. Such an assumption, however, was not warranted. The variation in moisture content at the different locations under the tree was as great as the variation in any vertical section.

## Manner of Obtaining Samples

In the beginning only one set of samples at each tree was taken. The plan was to take samples of each foot depth—to five feet. This practice was soon discontinued, and at each of the selected trees twelve sets were taken at distances from 4 to 10 feet from the trunk of the tree. The first two samples in each set were 6 inches, so that finally the samples taken were of depths: top 6 inches, 6 inches to 12 inches, then 12 to 24, 24 to 36, 36 to 48, and 48 to 57 inches, making six samples in the vertical and 72 samples in all from the tree. Where there was an underlying rock or hardpan formation the samples were taken to such layer.

## Variable Moisture Conditions Prevailing

The following record will give some idea of the moisture variation in the Norfolk soil; and comes from a 20 year old seedling orange tree having a spread of about 20 feet. In this set of samples it will be seen that the lowest moisture content in any vertical section varied from 1.9 percent to 2.7 percent, and appearing at any depth in the section. The maximum moisture content varied from 3.1 percent to 5.9 percent, and in any vertical section.

It will be further noted that the

## Six

lowest moisture content is 1.9 and the highest 5.9 percent. These are by no means the least or even greatest moisture content percentages found during the investigations, but it merely represents a set of records taken at random to show the conditions. A greater variation will be shown in this type of soil later.

Location from tree	Depth of sample	Maximum percent	Minimum percent	Depth of sample
5 feet N	Top 6 inches	3.5	1.9	4th foot
8.5 " N	Top 6 inches	3.5	1.9	3rd foot
7.5 " NE	Top 6 inches	4.0	2.3	4th foot
5 " E	5th foot	3.4	2.0	3rd foot
10 " E	Top 6 inches	4.9	2.3	2nd and 3rd
7.5 " SE	Top 6 inches	4.9	2.4	2nd foot
5 " S	4th foot	3.1	2.4	5th foot
8.5 " S	Top 6 inches	5.9	2.2	5th foot
7.5 " SW	5th foot	3.3	2.0	3rd foot
5 " W	5th foot	4.0	2.4	2nd foot
10 " W	Top 6 inches	3.3	2.7	2nd foot
7.5 " NW	Top 6 inches	4.1	2.3	2nd foot

\* A complete record of one set of samples in the Norfolk fine sand soil is appended.

A set of soil samples taken in the Gainesville soils of the coquina phase will show even a greater variation. The following table shows a record of a set taken at a tree where the depth to rock varied from 6 inches to more than 7 feet below the surface, and where pot-holes were common. The rock platform was very irregular, as shown in the accompanying plan and sketch. Fig. 1

In this set the lowest moisture content under the tree varied from 1.35 percent to 3.14 percent; the low point appearing in any vertical section. The maximum varied from 2.29 to 11.55 percent. Beneath this tree on this date there was a variation in moisture content of from 1.35 percent in the fourth foot at a point 9 feet north of the trunk to a maximum of 11.55 percent in the fifth foot section at a point 7.5 feet northeast of the trunk. Incidentally, the points of maximum and minimum moisture contents are less than 5 feet apart. Fig. 2

Location from tree		Depth of sample		Gainesville Sand, Coquina Phase		Depth of sample	
5 feet N	9 " N	2nd foot	3rd foot	Maximum percent	Minimum percent	4th foot	4th foot
7.5 " NE		5th foot		11.55	2.66	6 to 12 inches	
5 " E		3rd foot		3.37	1.48	4th foot	
9 " E		3rd foot		3.66	1.83	Top 6 inches	
7.5 " SE		5th foot		3.93	1.69	6 to 12 inches	
4.5 " S		5th foot		6.93	2.24	Top 6 in. and 4th foot	
9 " S		5th foot		6.19	1.68	6 to 12 inches	
7.5 " SW		3rd foot		3.23	2.17	6 to 12 inches	
5 " W		Top 6 inches		4.41	3.14	4th foot	
9 " W		4th foot		5.18	2.69	2nd foot	
7.5 " NW		5th foot		3.87	1.74	6 to 12 inches	

\* A complete record of one set of samples in the Gainesville sandy soil is appended.

#### Soil Once Dried Out Difficult to Re-wet

Closely associated with the variable moisture condition of the soil is the

## THE CITRUS INDUSTRY

difficulty of re-wetting the soil after it has dried out to the incoherent or "running dry" stage. The top soil, when dry, is repellant of water and difficult to re-wet, as every one knows but the slowness of re-moistening of the sub-soil is a phase with which few are acquainted since it is generally supposed that the soil moisture in-

the soil samples. The following tabulation and notes of rainfall will indicate, in a measure, the possible length of time necessary to replenish the moisture removed by the roots in the process of tree growth and fruit development. They were taken at points 3 feet north and 3 feet south of a 4 year old pineapple tree set to replace a large seedling which had been removed after it had deteriorated to such a degree that it was no longer of commercial value.

This tabulation shows that after 8.5 inches of rain had fallen in July there was a variable moisture content around the tree, and that 19 inches of rain in 2½ months accomplished what 8.5 inches of rain in July failed to do. Since the rainy season of 1924 was prolonged it is not difficult to imagine the fate of this tree if a normal season had obtained. Another instance of the difficulty of re-wetting the soil occurred in a grove where an artesian well has been flowing for at least 18 months. With this water near at hand running dry sand was obtained at a depth of 2.5 feet below the surface at a point 5 feet from the stream. It might appear to some that the character of the water had something to do with the lack of wetting, but such is hardly the case since the same condition

North side		South side	
August 1, 1924	Top 6 inches — 9 percent 5th foot — 2 percent	8 percent 6 percent	Following 8.5 inches of rain July
September 12	Top 6 inches — 4 percent 5th foot — 1.8 percent	5 percent 2.2 percent	Rain in August 2.2 inches
October 13	Top 6 inches — 9.7 percent 5th foot — 6.3 percent	8.5 percent 6.5 percent	Rain in September 7.5 inches

Soil eventually uniformly wet after 19 inches of rain had fallen.

connection it must be considered that the roots if present in these dry areas will be subject to injury so long as the dry condition exists, regardless of any increase in the moisture content at any other point. In many cases

prevailed following a series of rains and also where shallow well water was applied by irrigation.

#### Where Does The Rain Water Go

This raises the question—What becomes of the rain water that falls?

Because of the repelling tendency of the surface soil, when it is dry, the water runs on the surface to a depression and then sinks in to a depth beyond the reach of the roots of the tree. Many samples have revealed a wet condition in one place and perhaps only 2 feet away dry sand has been found. Even more extreme conditions have been found. The dry soil in the root zone resulted from the roots removing the moisture in their normal functioning. Naturally, one would expect to find less moisture in the soil when roots are present than when they are not present, but one would hardly expect to find dry sand and feeding roots within 6 inches of a moist area and no roots.

dead dry roots from feeding root size to ¼ inch in diameter, and even larger have been brought up in

This condition can be explained, and understood, when the characteristics of the soil are better known. When the extent of capillary action in the soil, and the factor known as the "Moisture Equivalent" are known. In the Norfolk soils there is little or no chance to reclaim the water which sinks to the lower depths, because of the few deep roots, and the absence of an underlying impervious or semi-impervious layer which would prevent a downward movement of the water below the root zone. Under this condition there cannot be a saturation of the soils for a protracted period. In the Gainesville soils the underlying rock platform obstructs the downward movement of water, except through pot-holes and by very slow percolation through the rock. Considerable water is lost by reason of the water running on the surface to a depression (which may be only a few inches deep) and sinking in. If the depression is near a pot-hole then the excess water will go straight down. Some of these holes are deeper than 12 feet; others merely represent an undulation of the rock platform, and tend to serve as holding basins until slow seepage has permitted the water to disappear. Where the rock is



Fig. 2. Six year old orange tree declining because of dry soil. Planted on Gainesville loamy sand.

close to the surface the soil dries out very rapidly, and there is no chance for replenishment except by rains and irrigation. When the water collects in basins in the rock if there are roots present they will be sub-

merged and perhaps injured. Even with a stoppage of the water in its downward movement by the rock a lateral spread is prevented by the undulation of the rock. This undoubtedly explains the extreme moisture variation existing in the Gainesville soil record previously given. It did occur in another instance when irrigation water could not surmount the rock barrier.

In the opinion of the speaker, the absence of general wilting (except at dry times) in the clayey hammocks and prairies can be attributed to the presence of the clay layer, more or less even, which prevents a downward loss of water.

As soon as the water in its downward movement encounters the clay it assumes a lateral movement (along the clay) under the trees, from where it is raised into the root zone by capillary attraction. Such an action is not possible in the Norfolk soils, and possible only to a limited extent in the Gainesville soil of the coquina phase. I have made studies of the moisture content in the flatwoods and prairie soil formations but have never found the extreme variation of moisture as found in the types so far considered. Usually, the normal and expected condition existed—the moisture content increased with the depth, of soil.

In the two soil types so far considered the principal cause of concern has been by reason of the dry soil. Fig 2 & 3. The continued curling of the leaves and decline of tree into the rainy season can be attributed to continued dry soil regardless of

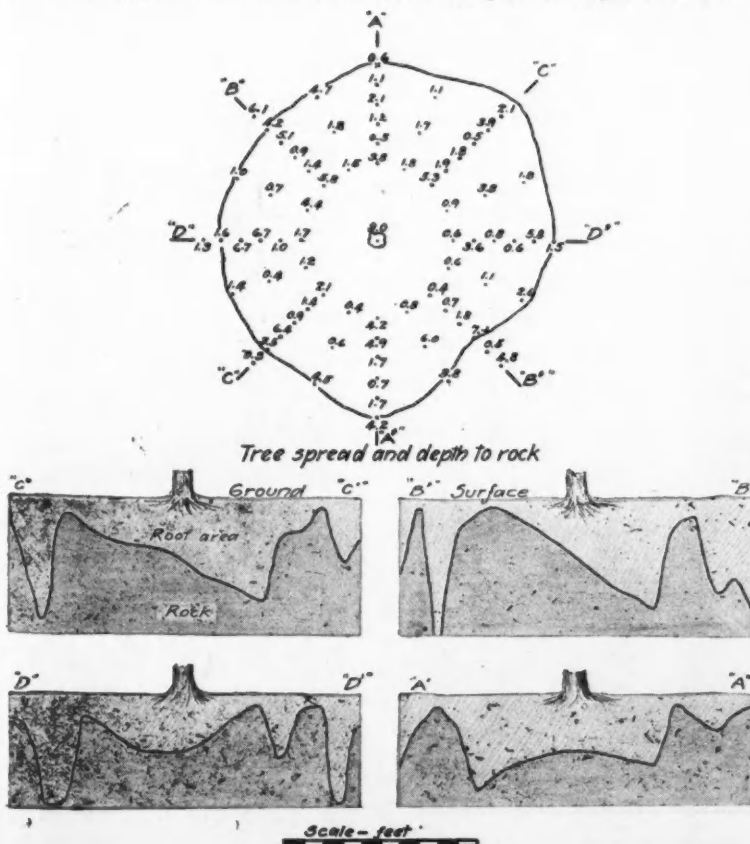


Fig. 1

the amount, intensity and distribution of the rain. The top soil in a moistened condition has presented misleading appearances since it has kept hidden the actual condition—that dry soil exists at the lower depths, despite the rains. In several instances tender dry dead roots, half an inch or more in diameter have been found at depths from 6 to 10 inches and encased in a dry cylinder of soil about 8 inches in diameter. In one instance there was only 1.64 percent of moisture in the dry cylinder whereas the soil surrounding the cylinder contained from 6 to 7 percent of moisture. Saturation is almost impossible in the Norfolk soils, but in the Gainesville soils a tree may suffer from either extreme of moisture.

#### Effect of Excess Water

The story of the water injured tree is well known to the grower. He knows the low places in his grove, and what to expect from the heavier types of soil, yet he is prone to forget after a dry season sets in that the soil was once saturated; and how wet a certain area was during the last rainy season. Then he begins to wonder what ails certain trees planted in the Portsmouth and St. Johns soils as well as in the Parkwood. These soils are all low lying, contain considerable organic matter, and have only from fair to poor drainage. Because of this the root systems are usually shallow. However, if there happens several succeeding years of light rainfall, or of evenly distributed precipitation, the ground water is lowered to an unusual depth and the tree sends out deeper roots in search of food and moisture. The inevitable wet year fol-

lows, the ground becomes saturated, the water table rises, the roots are submerged and the development of the tree for the few preceeding years is nullified. The deep roots are killed and the top necessarily suffers. Possibly the water in the ground will lower and some of the deep roots survive. The dry period follows, the soil dries out from the top and the feeding roots are affected, and since both the top and deep roots may be effected there will not be enough remaining to satisfy the transpirational requirements of the tree. The condition of the tree at the time it is subjected to these extremes may

have an influence on its subsequent behavior. One instance observed will support this statement.

It was noted in one grove that a

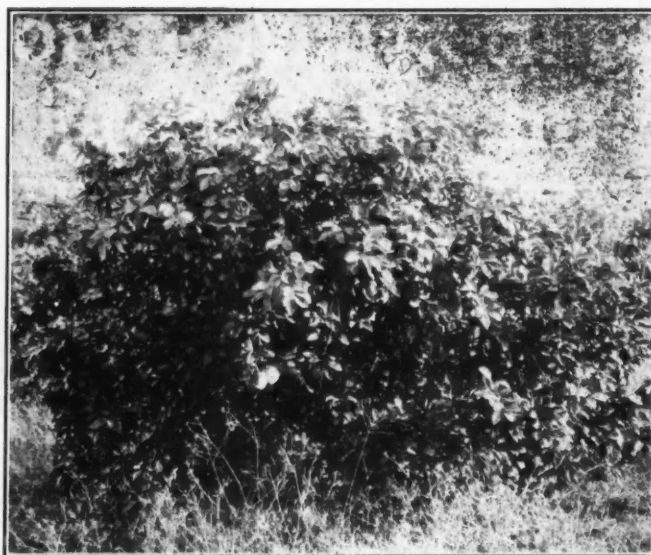


Fig. 4.

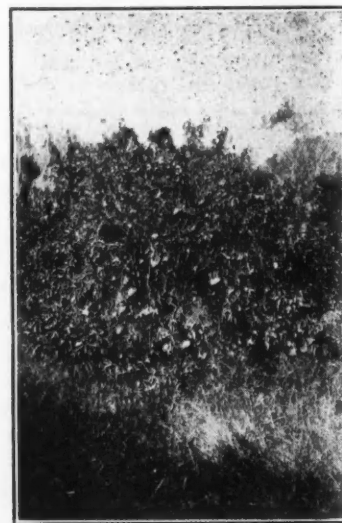


Fig. 5.

tree had put on an excellent flush of growth; and adjoining tree, subject to the same conditions, did not. Later, the two trees were submerged as deep and for a long period—several weeks.

Today, the tree which had put on the flush of growth is alive (Fig. 4) and is suffering but slightly from the effects of the water, whereas the other tree died about 3 weeks after the water disappeared from the surface. (Fig. 5) The initial healthiness of the tree undoubtedly will explain the

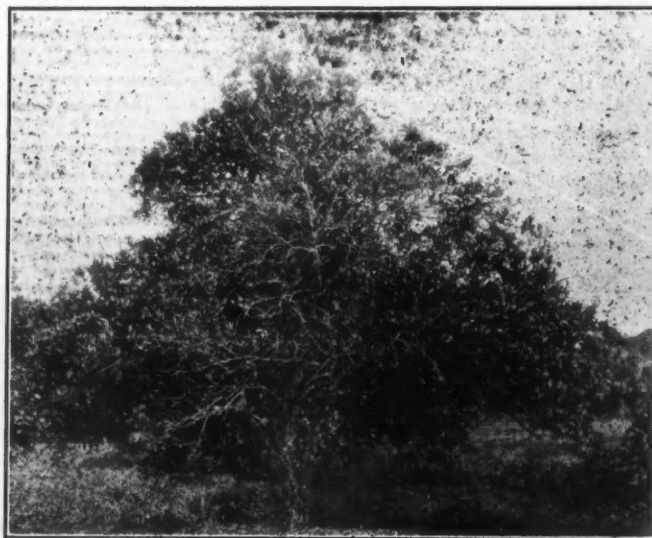


Fig. 3. 15 year old orange tree declining because of dry soil. Planted on Norfolk fine sand.

action of the trees.

Adequate drainage will be beneficial to citrus trees planted in soils of the St. Johns and Portsmouth types, or those which are of a sandy nature and contain considerable organic matter in the top section. The organic matter tends to retain the moisture. These soils wet uniformly,

side. This condition presents a rather difficult problem. The hard marl layer prevents a downward penetration of roots, hence the root zone is limited. (Fig. 6) A removal of the excess water from the basins is necessary, so that drainage is essential. Because of the impossibility of moisture replenishment through the hard marl layer

to provide an outlet for water from a well. It was laid 3 feet deep. Again chlorosis appeared where none existed before. Investigation disclosed the fact that the soil was more dry over the drain than at a point 30 feet away—which was to be expected. However, in this case the removal of the ground water by the drain worked to a disadvantage to the tree in that during periods of light rains, or no rains, the roots in search for moisture sufficient for their sustenance and growth went deep and came in contact with the calcium carbonate in the subsoil. Away from the ditch there was more moisture available, and consequently there was less need for the roots to extend downward; they were therefore less affected. Overdrainage was responsible for this condition, and care must be exercised in draining this type of soil; means should be provided to remove the surface water only.

Citrus trees have declined both slowly and rapidly in the low marl hammocks. Generally, the decline is slow and the trees have shown symptoms of water injury; however, several cases have been observed when the tree has gone rapidly, but in all such cases there has been an underlying hard layer close to the surface which had a decided influence on the moisture conditions.



Fig. 6. Trench exposing hard marl layer 8 inches below the surface. Note absence of roots below layer; or restricted root zone.

as a rule, because of their low-lying position, texture, and nearness to the source of underground water supply. Seepage plays an important part in the replenishment of water removed.

#### Low Hammock Conditions

The low marl hammocks and clays of the Parkwood series—particularly the marl—present a more difficult problem from the moisture standpoint. These soils usually contain considerable organic matter in the top soil but are underlain with clay, soft marl, hard marl layers, or, limestone rock. The hard layers undulate and present a condition where extremes of rainfall work to a disadvantage of the tree in its older life. In one instance (a tree about 14 years old, and having a spread of about 20 feet) the underlying hard marl layer undulated and varied from 9 inches to more than 5 feet deep. On the east side of the tree the soil dried out to the critical point when there was a saturated soil at the depth of 2 feet on the north side of the tree. In this instance the southeast quarter of the tree had a shallow subsoil; the soil dried out even though there was an abundance of water in the northwest quarter; and it might be added that the tree ultimately declined, beginning first on the southeast

and the restriction to downward root development by the marl irrigation should be practiced.

If irrigation is practiced the roots will secure the necessary moisture without going to the depths in the undulating subsoil, and therefore they will not be so liable to injury in the subsequent wet periods.

Where the softer marl subsoil prevails in the low hammocks considerably more judgment must be exercised in providing means for the removal of the excess water. Over drainage has been accomplished in some instances, and frenched leaves have resulted. By removing the excess water the roots are permitted to come in contact with the carbonate of lime in the soil, or the soil solution may become too concentrate, and the roots are injured thereby. This condition has been observed in several instances. In one, a ditch was cut through a ridge in order to drain low areas several acres in extent. The extreme cut was from 3.5 to 4 feet. Immediately following the completion of the ditch trees along it, and for several rows back, were noticed to decline with "frenching" or chlorosis as the principal symptom. In the same grove a box drain was laid to drain a low area and also

#### Factors Affecting Soil Water Movement

There are two important factors to be considered in dealing with the soil moisture problems—the extent of the capillary movement of the water in the soil, and the least moisture that can be in the soil so that the tree or plant may continue to live and develop. From the first we can get an idea of the possibility of rewetting the soil once the moisture has been depleted; from the other we can determine the minimum reduction permissible in the various series and types of soil.

As a result of some studies, still incomplete, however, it appears that in the sandy soils of the St. Lucie and Leon series (or the scrub soils as you generally recognize them) the extreme movement of water by capillary action will not exceed 15 inches in the finest sand and about 10 inches in that of coarser particles. In yellow soils of the Norfolk series the ranges will be a little higher, but the maximum so far obtained does not exceed 18 inches. The maximum figures in each case have been obtained when the soil had been moistened before being placed in the capillary tube. When the soil was placed in the tube

Continued on page 22

# Can Corporate Marketing Solve the Farm Problem?

## FOREWORD

In its regular Service Letter of January 17, 1925, Whaley-Eaton Service, Washington, D. C., carried a paragraph stating that "an important thought had been presented privately in Washington during the week, relative to distribution," and that it could "be summarized as follows:"

If Congress does anything to further cooperative marketing it ought to be careful not to "outlaw" private enterprise in the same direction. Capital in this country has never gone in for distribution. There have never been giant corporations formed to handle perishables straight through from producer to retailer.

The one experiment in that direction is a company now handling about \$400,000 worth of perishables annually and operating nationally. It expects soon to increase its capital and operations. The experience of this company has proved that it is possible to standardize quality, guarantee supply, stabilize prices and earn profits on a cost of distribution that is economically sound. The way should not be closed by Congress to such private corporations. The opportunity is there and capital will find it, sooner or later.

This brief paragraph occasioned some hundreds of inquiries, from all parts of the Union, and from abroad. Accordingly, we suggested to Mr. J. S. Crutchfield, President of the American Fruit Growers Incorporated, that he draft a letter explaining the methods his organization was employing, the underlying principles its experiments had seemed to demonstrate and the reasons why, in his opinion, corporate finance would find an inviting field of operation in the distribution of perishables.

Because it is pioneering and seems to have blazed a trail that may lead to a solution of at least one phase of the agricultural problem, the American Fruit Growers Inc. is worthy of intelligent study. Earnest men have been hoping that some other than a legislative solution of the agricultural problem could be found. Admittedly, the crux of farm difficulties lies in marketing. Farming is essentially, as at present conducted, an individualistic enterprise. Agriculture has not been able to compete with other industries successfully either for capital or credit. Further than that, the farmer has been subject to this great economic penalty he is a weak unit for buying or selling.

In a recent instructive article on "Feeding the World," Sir A. Daniel Hall, arguing that the increasing demand for food not only means higher prices but necessitates enlarged production, concludes that hope for the future "lies in the creation of large corporation farms, working with all the advantages of command of capital to turn the land to its fullest use, organization of labor, employment of machinery, utilization of commercial and scientific knowledge." If, however, as seems to be the fact, corporate distribution is able to overcome the economic weakness of the small farm as a buying and selling unit, by acting as its marketing and as its (within limits) purchasing agent, it is quite probably that the most serious of the farm's economic handicaps is overcome.

There is, in this connection, a most important factor to be considered. It relates to the experiments which some of the insurance companies have been making in insuring certain crops of perishables against "cost of production." Such experiments were conducted in a large way, this spring, in South Carolina, where members of one of the cooperative associations were protected, under a blanket policy which virtually assured a minimum return per acre, in planting truck, equal to the average cost of production. In such cases, the cooperatives are virtually co-insurers. So, in corporate distribution, the insurance companies are inclined to think that they can minimize their risk, and make general crop insurance practicable, where there is advance assurance that such crops as are produced will be scientifically and efficiently marketed. It sharply cuts the likelihood of loss. An insurance policy attached

to a farmer's note is good collateral either at the commercial banks or if offered in bulk to the Intermediate Credit Banks for rediscount, which means, that the farmer can obtain cash to purchase seed, fertilizer, etc. It is a peculiar thing that the cost of such insurance, it seems probable, will be almost exactly equal to the difference in the cash and time cost of fertilizer. It is significant that "corporate distribution" implies cautionary devices such as general business employees.

Some of the cooperatives have been most efficiently handled and, operating in special fields, have produced revolutionary results. They will continue to do so, and there is no contrariety of interest between them and corporate distributors. The latter, however, as Mr. Crutchfield indicates, have a somewhat broader field. It is the protection and education of the consumer. President Harding, it will be recollected, just before his death, suggested the organization of consumers into cooperative purchasing societies. He indicated a fear that the lawful combinations of food-producers might lead to such artificial enhancement of prices as to endanger the well-being of the urban population. This is the line of thought that has been followed by the recent agricultural inquiry in England.

Careful observers in Washington take the view that perhaps the most notable contribution of the American Fruit Growers Incorporated, to the solution of the farm marketing problem is its demonstration that "the way to take care of the producer is to take care of the consumer first," which is axiomatic in general business. It was Mr. Crutchfield's belief that perishables could be trade-marked, identified as could be a piece of quality machinery, advertised accordingly and sold at such a premium as quality-advertised goods usually command, in any branch of trade; in other words, that a demand could be created among consumers for particularly identified brands of fruits or vegetables.

There was nothing particularly new in this thought if a special commodity only were concerned. The public had been educated to particular brands of raisins, from a particular part of the country. The uniqueness of the plan lay in the fact that an apple from Virginia might be found side-by-side with one from Oregon, each under the same corporate trade mark. Quality was made the test, not place of origin. Therefore, growers in the most widely separated parts of the nation might benefit equally from a sustained advertising campaign that featured a trade-mark under which the products of each were sold. The point has not been reached whereby every early potato or cucumber can be trade-marked, but every container is so marked, and the retailers "buy by trade mark." Each orange and grapefruit actually is stamped with a trade mark.

The test of the practicability of such a method of merchandizing perishable foods would seem to lie in the question of whether or not higher prices are thereby obtained. In New York, the distribution of grapefruit is by auction daily. The auctions are held at the same place, by the same auctioneer. The records show that the advertised fruit, bearing the advertised trade-mark with its assurance of quality, sells regularly at from 15 per cent to 25 per cent more than is paid for comparable or identical fruit otherwise handled. The purchasing is by retailers who are expert in handling fruit and are keen judges of its quality. They seem to have found that the "telephone trade" is willing to pay premium prices for guaranteed goods. This premium goes to pay the cost of advertising, results in a higher return to the producer and leaves a fair profit for the corporate distributor.

Another feature of corporate distribution arises from the necessity of maintaining a permanent organization, which is a prerequisite to efficiency. This means that the organization cannot be dissolved during the periods when perishable foods are not coming into the market from a particular section. To meet this situation, the corporate distributor follows the seasons around the earth. This has been so adroitly done that fresh fruits and vegetables are now offered the American public every day in the year.

There is still another field in which the corporate distributor appears to be perform-

ing an economic function of great importance. Just as America has been an exporter of staple foods, such as wheat, there has been a tendency in recent years toward over-production of citrus fruits and vegetables. It was decided to meet the glut in the grapefruit market by exploiting that product in London. Starting with a unit supply for that city of one carload weekly, the demand was rapidly worked up to 13 carloads, and there has just been a beginning.

Important as have been the lessons learned through the operations of the American Fruit Growers Incorporated, the name of which hardly seems broad enough in view of the fact that its operations are not at all confined either to the growing or the marketing of fruit, it seems obvious that a beginning has just been made of the use of corporate capital in the marketing of farm products. There is room for many times the capital now so employed. Finance, indeed, has not hesitated to invade the field of milk, the distribution of which is well stabilized, not only assuring the public of a certain and certified supply, but also notably benefitting the status of the producer and increasing his credit standing.

There are now some billions of capital loaned on the farms of this country, by the Federal Land Banks, the Joint Stock Banks, the insurance companies and private investors. Any method that tends to assure efficiency in the sale of farm products, whether perishables or not, tends also to stabilize farm income and read into it a degree of certainty that has lamentably been absent. On the theory, therefore, now so widely held, that it is the bounden duty of bankers and financiers, in investing the funds entrusted to their care, to have regard not only for safety but for the degree of national and social good such investments will produce, it is altogether likely that every financial encouragement will hereafter be given to efficiently managed corporations that devote themselves to the distribution of farm products. Such distribution, after all, is a highly specialized endeavor, which only trained men can successfully undertake. It seems unreasonable to expect a man at one and the same time to be an efficient planter of crops and a scientific distributor of them. Even in so highly developed an industry as textiles, very few mills undertake to sell as well as to make the goods. The markets for farm products are continuously being broken by floods of "distress products," products thrown on the market by the small producers who know nothing of salesmanship and simply take what they can get. That practice has been ruinous, though inevitably it is very much as if the merchants in a particular town were being continuously subjected to the competition of stores that had failed and were selling their stocks for what they could get. Corporate distribution of perishables means that the small producer can have his products handled with all the skill and efficiency that a great corporation is able to command. It implies the gradual elimination of all "distress selling."

It is hoped that this Pamphlet will arouse discussion, pro or con. It is generally understood that Mr. Jardine, now Secretary of Agriculture, believes that the solution of the farm problem can be found not so much in legislation as in the application of business principles to the conduct of agriculture.

## MR. CRUTCHFIELD'S LETTER

Whaley-Eaton Service,  
Munsey Building,  
Washington, D. C.  
Gentlemen:

The problem of distributing and marketing farm products, especially fresh fruits and vegetables, has been studied with great care by the national government, particularly during the last ten years. It has been a subject of general interest among

bankers, railroad officials, financiers and economists, and the public as a whole, since the war.

In August, 1920, freight rates were advanced 35 per cent to 40 per cent; fruits and vegetables, being in a high freight classification, were very severely affected. From that time, the question of improved marketing for all kinds of farm products has been an intensely practical one. It is now generally conceded that an impoverished agriculture means business depression for the nation. It is interesting to note, for example, that in the recent selection of a Secretary of Agriculture, qualifications in marketing rather than merely in production, were considered.

National and State governments have for many years spent large sums of money in promoting organization of cooperative marketing associations among producers. Presidents, Senators, Congressmen and State Legislators, have specifically endorsed cooperative marketing as "the way out" for the farmer. The cooperative movement has made large strides, and has accomplished a great deal of good toward reaching a solution of these important problems. Cooperative marketing of farm products has developed rapidly, because of the plight of the producer, and it may be said, largely, if not altogether, for the producer's benefit. In many instances, this very fact has proved a weakness.

It is now generally recognized that what the farm producers need, is organized marketing and distribution on a national and international scale.

It is also gradually dawning on the general public that the consumer as much as, or perhaps more than, the producer, is interested in organized marketing, particularly of fresh fruits and vegetables. The producer raises products to sell; the consumer purchases these products to eat, mostly in the original form. Hence, the consumer is very vitally interested in being assured an adequate marketing service for the supply of what now are conceded to be "necessities of life" second in importance only to the milk supply, because of the former's large vitamin content.

Perhaps the most general form of organization among the growers will be along "cooperative, non-profit," lines. However, in many instances the cooperative type of organization is being succeeded by a corporate form of organization; some on a more or less mutual basis, and others, purely commercial. It must be admitted that what the industry needs is adequate organization: "cooperative non-pro-

fit," "corporate," or "private." The problem to be solved is an economic one. Pertaining to our own lines of fresh fruits and vegetables, it must be admitted, looking at the problem from the consumer's standpoint as well as the producer's, that successful distribution and marketing of perishable fruits and vegetables is one of the great business undertakings of the nation. It can only be approached through the application of strictly business principles and organization.

To perform a national and international marketing service, requires a stable organization, covering, daily, all the markets of the United States and foreign countries on one basis or another, and the adoption of permanent merchandizing methods, including trade marked products and large scale consumer advertising.

Frequently the growers, in organizing along cooperative non-profit lines, have overlooked the fact that when they furnish the capital for the marketing division of their organization that capital must usually be taken out of the first proceeds of the sale of their current crops. The net results, then, is substantially the same as borrowing the funds from a bank. It is, also, frequently overlooked that such capital is entitled to 6 percent interest and that capital so invested assumes the risk to which capital invested in any business enterprise is subject. It is seriously questioned by economists whether or not it is good business for a producer, whose farm is already mortgaged, to invest additional capital in any form of marketing enterprise which, experience proves, is frequently a losing venture, particularly in the hands of those inexperienced in the intricate problems of modern merchandizing.

The American Fruit Growers Incorporated, was organized in June, 1919, and has a paid-in capital of over five million dollars. The nucleus of its organization was the distributing firm of Crutchfield and Woolfolk, a partnership then doing a business of approximately fifteen million dollars a year. Crutchfield and Woolfolk had been active in the organization of the citrus industry of Florida; the cantaloupe industry of the Western States and of California, Arizona and Colorado; and the apple industry of the Eastern States and the Northwest, handling as well the general line of fruits and vegetables.

Recognizing the insistent demand for better and more economical distribution, cutting down the margin between the producer and consumer, and being keenly interested in work-

ing out the problem, Crutchfield and Woolfolk organized the American Fruit Growers Incorporated, using their own successful business as the nucleus.

Joining Crutchfield and Woolfolk in this enterprise were many of the leading fruit growers of the country, a majority of the former employees of the partnership, and a considerable number of the jobbing trade. The remainder of the capital was subscribed by such representative factors as leading officials of the United Fruit Company, and representative industrial leaders and business men, mostly of Pittsburgh. The capital stock was subscribed without underwriting expense. All stockholders joined the enterprise on the same basis, except that Crutchfield and Woolfolk received two shares of common stock for each hundred dollars of cash assets they put into the business. The Board of Directors was composed of leading growers of the country, one of the vice-presidents of the United Fruit Company, and representative industrial leaders and bankers.

It was recognized that, in order to effect economics in distribution, perishable products must be standardized in the growing process. The company therefore invested in production properties in the leading fruit and vegetable districts of the United States, and its production operations have contributed measurably to improving production methods in the past five years. The company's policy has called for steady improvement of its properties and maintenance of its selling service, at highest efficiency, regardless of immediate profits. The company also sponsored a system of marketing individual fruit, and established the Blue Goose trade mark, which was stamped on the fruit itself. This was the first large scale movement to identify fruit to the ultimate consumer. To be successful, it required a marketing system that would insure the product reaching the consumer with regularity and in perfect condition.

The American Fruit Growers Incorporated may be said to be the first determined move to build a marketing system for fresh fruits and vegetables to meet the requirements of the consumer as well as the producer. It makes available to the industry much needed additional working capital drawn from the open money market.

The company's distribution has been extended to the smaller markets of the United States and Canada, and

Continued on page 27

# The Citrus Industry

Exclusive publication of the Citrus Growers and Shippers

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## GROVE CALENDAR FOR AUGUST

### Timely Suggestions for Grove Work During the Present Month.

Prune out dead wood and water sprouts. Avoid heavy pruning of branches at all times.

Cover all large cuts with coat of warm grafting wax.

Get sprayer in good order for next months work.

Spread the brown fungus of white fly.

Make plans for fall and winter grove planting.

Continue spraying pecans for scab control.

## THE MARKETING SITUATION

Present indications are that Florida will enter the coming citrus season with a greater number of strong marketing organizations and more efficient marketing service than at any period in the past.

The recent reorganization of The Florida Citrus Exchange has brought many changes both in the personnel and the policies of this co-operative marketing agency. New men are at the head of many of the important departments and new policies have been adopted in many of its working features.

Several new marketing organizations of considerable magnitude have also entered the field. Among the most important of these are W. H. Mouser & Company, of Orlando, and the Grower Sales Company, of Tampa, headed by L. C. Edwards and C. E. Stewart, Jr., both for many years prominently connected with The Florida Citrus Exchange.

In addition to these organizations other important marketing agencies of the state have

strengthened their organizations by the addition of new men and the taking over of new packing houses.

The American Fruit Growers Inc., has added largely to the number of packing houses marketing through its organization and under its trade name and has otherwise greatly strengthened its connections in the Florida field.

Chase & Company, pioneer marketing agency of the state, have added to their organization as sales manager Mr. A. M. Pratt, of Redlands, California, and are conducting an aggressive campaign for the business of the fruit growers.

The Standard Growers Exchange, Gentile Brothers Company, and numerous other marketing agencies of the state are preparing to enter the field this fall with renewed vigor and activity.

With the certainty that the crop this season will be much less than that of a year ago and with this wide range of marketing agencies from which to make selection the growers of quality fruit may look forward to the approaching season with confidence of securing better prices for their product than at any time in recent years.

## THE CROP OUTLOOK

That the citrus crop this year will be several million boxes less than the crop of 1924 is the view of practically every well informed citrus grower and shipper. It is conceded that the yield of oranges will be far less than that of a year ago while the shortage in the yield of grapefruit is estimated as any where from twenty-five to fifty percent below the yield of 1924.

So far as The Citrus Industry has been able to learn very little fruit has as yet been sold to speculators. The growers believe that the prices will be high and have declined to sell at prices the buyers have been willing to pay.

Discussing the situation F. L. Skelly, Manager, American Fruit Growers Inc. of Orlando, says:

"There has been very little fruit sold to speculators up to the present time," says Mr. Skelly "as the growers ideas of values are high, which condition in all probability is justified. The country as a whole is in a prosperous condition and if our oranges and grapefruit are of good quality the coming season we have every reason to believe that the consuming public is going to take them at very satisfactory prices.

"While there is a heavy crop in the Northwest, other sections of the country are reporting generally light.

"California has a good setting of citrus fruit but during the middle of July they had an extremely hot spell for ten days which is causing considerable to drop. It is reported that during this hot spell the drop of fruit has been the heaviest ever known. However, it will probably be the middle of August or the first of September before it is known just what the crop will be in California, but the crop will certainly be far short of what was anticipated a month or more ago."

## HOW FLORIDA CAN EXPAND ITS CITRUS MARKET

V. H. Power, second vice-president of the Manufacturers Record, has recently had occasion to come in touch with a great deal of work that is being done in the establishment of orange juice booths or stores in various parts of the country in the interest of California oranges. Based on the things he has learned in this connection, he has recently written on several occasions to the Florida Citrus Exchange, giving some information on the subject. In his letter of June 20 to the advertising manager of the Citrus Exchange he stated the case so clearly that we are giving his letter for the benefit of our many Florida readers and others interested:

"The recent examination of the Florida orange juice question and the correspondence about it with you has developed the following suggestions: That the Exchange should have booths in the 1926 southern exposition, to be held in the Grand Central Palace, New York, one on each floor; that the juice from the Florida orange at those booths could be dispensed without cost to all visitors who come for it; that the combination of grapefruit and orange juice might also be a feature of the booth; that one orange and one grapefruit should be given to each caller; that the booths should be artistically arranged, symbolic of the orange and of Florida, and have ample spacing; in fact, one or two might use an orange grove scene as a part of the booth decoration, and one floor ought to show the machinery and equipment that handles the juice so visitors can see clearly how carefully, scientifically and cleanly it is handled and dispensed.

"All this will cost some money, but the Exchange and the orange growers can very well afford it, and the results flowing from both will be the most far-reaching and economical advertising, in my opinion, the exchange can do as one kind or feature of Florida orange advertising.

"If this suggestion has any merit, and you feel like giving it favorable consideration, no time is to be lost in securing the right location, as space for the 1926 exposition is already being closed.

"Other details about the booth will come to you so that you can show the Florida orange industry in its fullest and complete developments and progress."

## FLORIDA INDUSTRIAL CONTEST FOR PRODUCTS SUGGESTION

The chief resources of Florida consist of climate, citrus fruits, phosphate, Fuller's earth, limestone, lumber, cotton, fisheries, naval stores, brick and tile, according to the Florida Society of America.

Latest census figures show that Florida is growing faster than any other state in the Union. With a percentage of growth of more than 400, it is safe to estimate that the state will reach a population of ten million people at a not distant date.

The increase of industry in Florida will ma-

terially aid in the growth of its population. Until recently, Florida has been a winter playground for the wealthy, but rising industry is rapidly making room for the middle and working classes.

The Society, of which Joseph W. Young, of Hollywood, Florida, is president, is sponsoring the Florida Industrial Contest, which offers \$20,000 in prizes for the names of products best suited to manufacture in this state.

Already thousands of suggestions have been received at contest headquarters, showing that interest throughout the country is centered on Florida's commercial future.

The Florida Industrial Contest is divided into three periods, the first of which ended June 1. Other periods will end on October 1 and January 1.

A prize of \$1,000 is offered for the best suggestion received during each of the three periods of the competition. In addition, lesser prizes will be given to other winning suggestions.

Winners of the three periods of the contest will constitute the eligible contestants for the grand award of \$10,000 which will be given on January 1 to the person who shall have suggested a product, which in the opinion of the judges, is best suited to manufacture in the southernmost state.

The work of judging entries received during the first period of the contest is almost completed, and an announcement of the winners will be made in a few days.

## NEW CITRUS EXPERT FOR FLORIDA

Doctor F. A. Wolf formerly connected with the Agricultural Experiment Stations of Alabama, Texas, and North Carolina has been assigned to investigational work on citrus and other fruit diseases in the U. S. Disease laboratory at Orlando, succeeding Prof. J. R. Winston who formerly held this position. Doctor Wolf is a man of wide experience and broad training in his field and the citrus growers of Florida are to be congratulated upon securing his services.

## FORMS NEW CONNECTION

Mr. H. L. Wall who for the past eighteen months has been associated with The Citrus Industry in the capacity of Advertising Manager has resigned his position with this publication to accept a position in the advertising department of The Citrus Exchange. In his work for The Citrus Industry Mr. Wall has acquired a large acquaintance among the citrus men of the state and goes to his new position well equipped for the work in hand.

## FIG GROWING IN TEXAS HAS A BIG HINT FOR FLORIDA

According to the estimate of Dr. W. E. Fruit, of Dickinson, Tex., 1,500,000 pounds of figs will be produced in Galveston county this year. The Houston Post-Dispatch remarks that with the production in neighboring counties added to this total, the fig district will make a highly creditable showing.

# Citrus Fruits 'Round the World

The consular district of Bordeaux borders on Spain, and practically all the oranges sold and consumed in the city of Bordeaux and the surrounding district are imported from Spain states Mr. Lucien Meiminger, American Consul at Bordeaux, France in a report received in the Department of Commerce. While Algeria exports oranges to France, a very small quantity of such fruit reaches the markets in the Bordeaux district as the bulk of Algerian orange imports are sold in Marseilles, the Rhine Valley, and in Paris. The Consulate is also informed by a large commission house in Bordeaux, that very little citrus fruit has been received from Italy during the past two years. Customs statistics of any particular value are not available for total volume of imports in the Bordeaux district as most of the fruit from Spain and Italy arrives in Bordeaux by rail and is cleared at points of entry into France, which points are outside of the Bordeaux consular district. For example, large quantities of oranges are imported into Bordeaux by way of Cerbere, Pyrenees Orientals (Consular district of Marseilles).

The following table indicates the quantities of citrus fruit declared for entry at the Bordeaux custom house in 1913, 1923, and 1924, which quantities (as explained above) are merely a fractional part of the total amounts brought in to the Bordeaux district.

Origin	1913 (Pounds)	1923 (Pounds)	1924 (Pounds)
Italy	110,230	1,413,149	467,375
Spain	103,616	108,025	15,432
Algeria	63,138	2,205	—
Tunis	46,297	—	—

In the Bayonne customs district which includes the frontier entry ports of Hendaye and Behobie, the amounts of citrus fruit declared for entry in 1923 were 40 metric tons (88,184 lbs.) of oranges and 14 tons (30,864 lbs.) of lemons from Spain; and in 1924, 44 tons (97,002 lbs.) of oranges and 15 tons (33,069 lbs.) of lemons from that country.

The foregoing statistics states Mr. Memminger, give a very inaccurate idea of the total importations of citrus fruit into the district as there is evidence in large cities and towns that oranges and lemons are marketed in very large quantities; all citrus

fruit must be imported as practically no citrus fruit is grown in the district.

The importers and dealers in citrus fruit at Bordeaux consulted expressed the opinion that the oranges of best quality imported into the district come from Valencia, Spain. Oranges from the region of Villareal (Casteilon de la Plana), Spain, are not considered as good in quality as those from Valencia. Oranges from Murcia, Spain, are also received in the Bordeaux district and are of two varieties—the blood oranges ("sanguines") and the "orange de conserve" which is similar in appearance to the ordinary orange from Valencia except that the skin is somewhat thicker and the fruit keeps for a long time.

From the end of October to the middle or last of April, oranges are most plentiful in the Bordeaux market, coming chiefly from the Valencia (Spain) region. During the period May to November, oranges are available in lesser quantities and are higher priced; these are the "sanguines" and the "oranges de conserve," coming mostly from Villareal and Southern Spain.

The business of importing citrus fruit at Bordeaux and dealing in it, wholesale and retail, is practically all in the hand of Spanish merchants located in Bordeaux. Some of the largest importers buy the fruit on the trees, paying a certain sum for the entire harvest, and hire pickers

and ship the fruit themselves. Other importers maintain buying agents or have partners in the fruit centers of Spain. The citrus fruit is generally imported in carload lots, coming via Cerbere.

The importers sort and grade the oranges and lemons after arrival from Spain. Oranges are graded according to their size; wholesale dealers buy unsorted fruit from importers but as a rule the importers, who are also wholesalers, prefer to sort and grade the fruit which they sell to the retail dealer, quoting to the retailer the price per hundred. A few importers wrap the better grades of

their fruit. Since the fruit is not packed in standard crates as in the United States, it is not possible to give accurately the sizes of fruit sold at Bordeaux.

In view of the fact that importers of citrus fruit here buy the fruit in bulk, carload lots, unsorted, by weight, it is difficult to give a comparison of prices in accordance with the American standard.

The following list of prices for oranges has been obtained from the largest importer and largest commission dealer at Bordeaux.

## (price paid by importers)

### May to October, 1924,

Francs 180 to Francs 220 (approximately \$9.42 to \$11.52) per 100 kilograms (or 220 lbs.) at the Bordeaux railway station.

### November, 1924 to April, 1925

Francs 140 to Francs 160 (approximately \$7.33 to \$8.38) per 100 kilograms (approximately 264 to 353 lbs.).

## Prices paid by consumers were:

### May to October, 1924

Francs 230 to Francs 250 (approximately \$12.05 to \$13.09) per 100 kilograms (or 220 lbs.).

### November, 1924, to April, 1925

Francs 150 to Francs 180 (approximately \$7.86 to \$9.43) per 100 kilograms (or 220 pounds).

Lemons imported into the Bordeaux district come mostly from Spain—from the Murcia region. The crop seasons for lemons are approximately the same as for oranges. At present, the lemons offered for sale in Bordeaux are known as "citrons de conserve." Few Italian lemons have been sold on the Bordeaux market for the past two years.

The Consul states that there appears to be but one merchant in Bordeaux selling grapefruit. He receives the fruit from Paris and pays Francs 5.00 (26 cts.) per grapefruit in Paris. Only a few of the fruit are received at a time, as there is very little demand for them. The Paris importer purchases the grapefruit from the United States. They are small-sized fruit, and in the United States would probably retail at about three for 25 cents, states Mr. Memminger. These grapefruit are selling in Bordeaux at Francs 7.00 per fruit (36 cts.) but the price is more often Francs 8.00 (42 cts.) per fruit. The

## THE CITRUS INDUSTRY

Fifteen

wholesale price, as previously stated, is Francs 5.00 (26 cts.)

The manager of an important Spanish firm in Bordeaux, dealing in citrus fruit, informed the Consulate that he tried at one time to introduce grapefruit from Spain but that the French people did not seem to take very well to the fruit so that he concluded demand did not warrant importation of grapefruit in wholesale quantities.

American exporters of oranges and grapefruit contemplating the Bordeaux market must face the following facts: Spanish merchants have controlled the trade in the Bordeaux district for many generations. At Bordeaux, the Spanish colony numbers more than 30,000 and at Bayonne and many other parts of the district, there is a considerable Spanish population. Also, owing to proximity to producing centers in Spain, the business of importing and selling oranges and lemons from Spain can be undertaken with facility and without great overhead charge. In addition, the Bordeaux market appears to be satisfied with the present offerings of citrus fruit. Another factor, adds Mr. Memminger, is the fact that in years when Italian crops are exceptionally plentiful, Italy contributes a certain quantity of citrus fruits. Mr. Memminger concludes his report with the statement that beyond the two present sources of supply for citrus fruit—Spain and Italy—Bordeaux merchants seem to take no interest in the possibility of purchasing elsewhere.

### Market for Citrus Fruit in Manchester (England)

For many years, states Mr. Charles W. Lewis, Jr., American Vice-Consul, at Manchester, England, in a report received in the Department of Commerce, the Manchester district has been one of the most important markets in the United Kingdom for the sale of fresh fruits, both citrus and deciduous.

Oranges are imported into the Manchester district chiefly from Spain (Valencia and Marcia regions), from Palestine (the Jaffa orange), and from the United States (California and Florida), and to a lesser extent from South Africa. Lemons come mostly from Sicily and Spain while the best grapefruit is from the United States.

The demand for oranges is greater than for any other citrus fruit. The bulk of orange imports come from Spain, also the cheapest oranges. The best and most expensive oranges consumed in the Man-

chester district are from Palestine (the Jaffa orange) and from California; few Florida oranges are sold in the Manchester market. The sale of Jaffa oranges has been seriously restricted recently due to the fact that the top portion of each orange has been found dry and pithy. While per capita consumption of citrus fruit in the Manchester district is small compared with United States consumption, Manchester dealers state emphatically that only fruit in good condition can be sold in that market, also that a few bad shipments will create a prejudice difficult to overcome.

The bulk of Spanish oranges sold on the Manchester market are imported direct from Spain into Manchester. On the other hand, relatively few California oranges are imported direct. They reach Manchester as consignments from London and Liverpool in most cases. The following tables indicate prices at which Valencia (Spanish) and Jaffa oranges have been selling on the Manchester market.

December 2, 1924		
240's	.....	\$3.36 to \$3.60
300's	.....	\$3.36 to \$3.60
360's	.....	\$3.12 to \$3.36
540's	.....	\$3.84 to \$3.90
December 30, 1924		
240's	.....	\$2.64 to \$2.76
300's	.....	\$2.88 to \$3.12
360's	.....	\$3.00 to \$3.24
540's	.....	\$3.60 to \$3.84
February 3, 1925		
240's	.....	\$2.64 to \$2.88
300's	.....	\$2.64 to \$2.88
360's	.....	\$2.64 to \$2.88
404's	.....	\$3.12 to \$3.90
March 3, 1925		
240's	.....	\$4.20 to \$4.32
300's	.....	\$4.32 to \$4.56
360's	.....	\$4.20 to \$4.44
540's	.....	\$4.02 to \$4.68
April 7, 1925		
240's	.....	\$3.84 to \$4.08
300's	.....	\$4.08 to \$4.32
360's	.....	\$4.08 to \$4.32
540's	.....	\$4.08 to \$4.20

(Note: Above prices were given in shillings and pence and have been converted into American currency on the basis that 1 shilling approximates 24 cents and 1 pence 2 cents. Prices given should, therefore, be considered only as approximate.)

The following prices were received for Jaffa oranges on April 7, 1925.

152's	.....	\$2.94 to \$3.00
144's	.....	\$2.82 to \$3.00
250's	.....	\$3.54 to \$3.60
180's	.....	\$3.54 to \$3.48

Lemons are imported into the Manchester district principally from Sicily but dealers state that the demand is small. Prices are more or less uniform throughout the year, varying between \$1.44 and \$1.94 for boxes of 300's and 360's. It does not appear, states Mr. Lewis, that any special effort has been made to stimulate consumption of lemons. Retail prices of lemons range between 30 cents and 36 cents per dozen.

Manchester dealers state that there

has been a very marked increase in the demand for grapefruit during the last two years. Previous to that time some difficulty was experienced in disposing of the limited quantities of grapefruit imported but now the demand is reported by dealers as good and steadily expanding.

Until recently, the general lack of knowledge of the qualities and methods of serving grapefruit was probably the salient force restricting sales among all classes of consumers, states Mr. Lewis. This consideration no longer holds with the upper and middle classes, but is significant in the case of the laboring class most of whom have not been able to buy grapefruit on account of prices beyond their reach. American shippers of grapefruit to England have done much to stimulate consumption of grapefruit by advertising their brands in the local press and fruit publications. Shippers of grapefruit from other countries have not been as active in this respect.

Practically all grapefruit sold in Manchester comes through London and Liverpool importers, who consign to Manchester wholesalers. The sale price varies with demand and seasons, but in the principal wholesale markets of Manchester crates of 54's to 96's brought the following prices April 8, 1925:

54's	.....	\$4.08
64's	.....	\$4.32 to \$4.56
70's	.....	\$4.80 to \$5.04
80's	.....	\$5.04 to \$5.40
96's	.....	\$5.28 to \$5.76

Sizes 70's, 80's, and 96's are the favorite sizes as they can be retailed at from 6 pence (12 cents) to 8 pence (16 cents) each. It is felt, states Mr. Lewis, that a reduction in the retail price of 2 pence (4 cents) each, especially on the present 6 pence (12 cent size), might result in a considerable expansion of demand, as the working class would probably start buying at such prices.

As already stated, American grapefruit is considered the best in the Manchester market, and with price reductions which would put grapefruit within reach of the laboring class, together with continued advertising by American exporters, the market for grapefruit should continue to expand.

American oranges should continue to meet strong competition from Spain and Palestine (Jaffa oranges) states Mr. Lewis. Spain sends a good, cheap orange while the excellent Jaffa orange is more expensive. California navel oranges are also held in esteem by those who have eaten them, adds Mr. Lewis. Well directed advertising

of American brands of oranges should prove effective in encouraging imports into the Manchester district from the United States, in the opinion of Mr. Lewis, especially in view of the admittedly increasing consumption of fruits.

#### Citrus Fruits in Frankfort (Germany) Consular District

In a report received in the Department of Commerce, Mr. F. T. F. Dumont, American Consul General, at Frankfort-on-Main, Germany, states that for several years during and following the war citrus fruits were almost unobtainable in Germany. After the stabilizing of German currency, the Government restrictions on the importation of certain so-called "luxury" products were removed and the market, for the first time since 1924 was flooded with citrus fruits. After having been deprived for so long of such fruits, there was a resultant heavy consumption by all classes, the more so because oranges were to be had in unlimited quantities at what were considered exceptionally low prices.

This heavy consumption of citrus fruits has continued, and oranges are to be had in abundance at moderate prices. Lemons are also plentiful with steady demand throughout the year. Grapefruit is but slightly known and has but a limited sale in the Frankfort district. The market for grapefruit, however, is constantly increasing, states Mr. Dumont. When the season for oranges is over—plums, peaches, pears, etc. are plentiful (according to season) in the market, there is usually little demand for citrus fruits.

No further efforts have been made to stimulate citrus consumption in the Frankfort district, states Mr. Dumont. Citrus consumption is not limited to any class of society so far as oranges and lemons are concerned. Grapefruit though is still a novelty, and its consumption is naturally restricted to wealthy persons and to travelers. The average German citizen has never tasted grapefruit; however, the price is prohibitive.

Oranges sold in the Frankfort district are imported exclusively from Italy and Spain; lemons come from Italy only; and grapefruit from the United States, arriving via Hamburg and Bremen. No grapefruit is imported directly by Frankfort wholesalers. Italian oranges imported by Frankfort wholesalers are of three kinds—"Blonde" or light-colored orange; "Sanguinelli" or part-blood orange; and "Sanguine" or full-blood Orange. Blood oranges are consider-

### THE CITRUS INDUSTRY

ed better in quality than the "Blonde" and are also more expensive. Italian oranges are shipped to the Frankfort district from Catania, Messina, and Palermo (Italy). Spanish oranges come from Valencia and Murcia (Spain). The Spanish Valencia oranges are cheaper, somewhat inferior in quality, but harder than those from Murcia, states Mr. Dumont. Fruit connoisseurs prefer the Italian oranges to the Spanish adds Mr. Dumont.

Italian oranges and lemons are shipped by railway direct to Frankfort (via Switzerland) without transshipment at frontiers, and arrive at their destination in seven to ten days. Spanish oranges, on the other hand reach Frankfort by rail and water; when by rail, they reach Frankfort via Hamburg. With favorable weather conditions, the fruit from Spain arrives at destination in excellent condition. In some cases, in order to supply their needs with as little delay as possible, Frankfort wholesalers purchase Spanish oranges at the fruit auctions in Hamburg, and thus obtain them in about six days.

Italian oranges and lemons reach the Frankfort market in boxes of uniform size, measuring 70 by 35 centimeters (or approximately 28 by 14 by 10 inches). The fruit is assorted into 128's, 160's, 200's, 300's, or 360's to a box. Each orange is wrapped in tissue paper. Italian lemons are shipped 300 to 360 to box. Orange boxes from Italy weigh about 35 kilograms (or 77 lbs.) when filled while lemon boxes weigh about 40 kilograms (or 88 lbs.) filled.

Spanish oranges are shipped in crate-like boxes 88 by 35 by 29 centimeters (approximately 35 by 15 by 11 inches) divided into three sections. These boxes are adapted for 200's, 240's, 300's, 420's, 504's, and 640's, and when filled weigh from 50 to 55 kilos each (approximately 110 to 121 lbs.). As import duty into Germany is levied on citrus fruit according to weight, it is important that the boxes be constructed of wood as light as possible in order that too much weight is not added by the box to weight of fruit.

At the end of April, 1925, Frankfort importers and wholesalers of Italian oranges paid the following prices per carload of 500 boxes; these prices include railway transportation to Frankfort, customs' duty, and drayage charges.

"Blonde" oranges .....	Marks	13.55
"Sanguinelli" oranges .....	"	15.15
"Sanguine" oranges .....	"	16.40

Spanish oranges (blood oranges) of best quality sold in the Frankfort

wholesale market at the end of April at 28.00 to 30.00 Marks (approximately \$6.72 to \$7.20 per box).

The wholesale price for lemons was 8.00 and 9.00 Marks (approximately \$1.92 to \$2.16) per box. (Note—In foregoing, Marks have been converted to American currency on the basis that 1 Mark equals about 24 cents).

Retail prices for citrus fruit at Frankfort vary according to the location of shops where sold. Oranges are retailed in fruit shops at from 2 to 10 cents each, according to size and quality of the fruit. Street vendor's prices are generally less. Frequently, as many as 15 oranges are sold in the streets at 1 Mark (about 24 cents). Lemons were retailing at the end of April at from 2 to 3 cents each. Grapefruit was selling at retail for from about 25 to 28 cents each.

Mr. Dumont states that price is the important factor in the marketing of citrus fruit in the Frankfort district, quality of fruit being secondary. He also states that a fair demand would be found to exist for grapefruit if they can be delivered in Frankfort at prices which would permit their retailing at 15 cents each.

#### Spanish Oranges

"Exportacion de Pasa Valencia" (Supplement to issue of June 4, 1925) a trade paper covering the Valencia, Spain, region, has the following comments on the orange industry of the Valencia region. "The present year (1925) has been a good one for the orange grower with a good harvest and excellent prices. That the harvest would be good has been the very general opinion for some months before the beginning of the season, and our prophecy remains fully justified. In reality, there has been less of the common or white (blanca) type of fruit than in the preceding year but the oranges have been larger and and growers have been able to market more boxes of an equal number of oranges. There has been a decided increase in the harvest of the blood oranges which are gaining in importance year by year; to-day, they represent the largest part of the total exportation. The fact that the winter was mild accounts largely for the fact that there has been an exportation of almost 2,000,000 cases more this year (1924-5) than the preceding year. The first sales were made about the last of August, at sight. There was not the haste of other

(Approximately	\$3.25	box
"	\$3.64	"
"	\$4.44	"

years in marketing the first shipments.

## Florida Experiment Station Expands Scope of Activity

July, the first month of the fiscal year, has seen a decided increase in the scope of work of the Florida Experimental Station. More funds are available under provisions of the last Legislature, and a number of new members have been added to the personnel of the station, according to an announcement made by Dr. Wilmon Newell, director.

"Probably the greatest increase in the work of a department has been in the cotton investigation work," says Dr. Newell. Heretofore work in boll weevil control, and in the control of certain cotton diseases, including cotton flit, has been conducted by the state plant board in conjunction with the experiment station. Decided improvements have been made, in the handling of both of these troubles.

"However, beginning July 1, the work was put entirely under the supervision of the experiment station, and has enlarged to include cotton breeding work, by which it is hoped to establish types and strains of the crop peculiarly adapted to Florida climate and conditions.

### Specialists Assisting

The board of control recently elected Dr. W. A. Carver, a graduate of Clemson college, who has done post graduate work at Wisconsin and Iowa State college, receiving his doctor's degree from the latter, to be assistant cotton specialist. He is a specialist in cotton breeding, and has begun work already.

The pathology, entomology, chemistry, and grass and forage crops work has also been enlarged and new members have been added to the staffs of these departments.

Dr. W. A. Kuntz until recently assistant plant pathologist of the State Plant Board, has been made assistant plant pathologist of the experiment station. He has been assigned to work in connection with tomato disease investigations being conducted by the experiment station in co-operation with the Bureau of Plant Industry, United States.

W. H. Thompson, formerly entomologist, citrus aphid investigations, State Plant Board has been made assistant entomologist of the experiment station: Archie N. Tissot, instructor in Entomology of Ohio State University, has also been made assistant entomologist. He succeeds A. H. Beyer, resigned.

Dr. R. M. Barnette, formerly assistant chemist, Tennessee Experiment station, is assistant chemist in charge of soil investigations at the station.

Dr. Walter A. Leukel, recent graduate of the University of Wisconsin, will begin work soon as assistant grass and forage crops specialist, and the work of this department will be enlarged.

### Livestock Work Enlarged

Livestock investigations will also be enlarged, through the establishment of a veterinary department in the experiment station. This department will be under the supervision of Dr. A. L. Shealy, professor of veterinary medicine at the College of Agriculture, and Dr. D. A. Sanders recently has been secured as assistant veterinarian. Dr. Sanders is a graduate of Clemson college and Kansas State college, and until recently was assistant veterinarian of the Kentucky Experiment Station.

Some 230 acres of land adjacent to the experiment station farm has also been added recently, which will enable the work in all departments to be expanded. Pasture work especially will be increased. Seventeen acres have also been added to the farm of the tobacco experiment station at Quincy, a branch of the main station.

Dr. Newell feels the investigations carried on by the experiment station will be of much greater value to the State in a few more years.

### TAMPA'S NEW MORNING DAILY TO START BEFORE OCTOBER FIRST

Definite confirmation of reports that a third daily newspaper will be established in Tampa, has just been received from the metropolis of the West Coast.

The new paper will be a seven-day morning daily, and will be called The Tampa Telegraph. Officials of the Gulf City Publishing Company, which was organized recently to start the new paper, are W. O. Stovall, president, and S. Lloyd Frisbie, vice president and general manager. Among the stockholders are between thirty and forty members of the Tampa Morning Tribune's staff under the ownership of Col. W. F. Stovall, as well as a number of prominent local business men.

Prior to the sale of the Tribune

recently, organization of the new publishing company and plans for starting a new morning newspaper in Tampa, were announced by officials of the new company, and immediately

Continued on page 21

### FAMOUS SKINNER SCUFFLE HOE

GETS 'EM GOING AND COMING

Here's a wonderful hoe—cuts forward and back. Skims along just under the surface—no lifting or chopping. Takes a 12-inch swath. Weeds and cultivates at the same time, leaving a fine dust mulch. Gets in close without danger. Works fast. One man replaces five. Six-foot handle, malleable shank riveted to saw steel blade, tempered to hold an edge. Fine for orchardists, grove owners, truckers, gardeners, street workers, railroad section men—anyone who uses a chopping hoe should have Skinner's Scuffle Hoe—it's sure one whale of a real weed "go getter." Not mailable.

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# Florida Citrus Organizations

Address by L. M. Rhodes, State Marketing Commissioner of Florida, at the American Institute of Cooperation at the University of Pennsylvania, July 29th

Mr. Chairman, Ladies and Gentlemen:

There are quite a number of organizations or agencies in Florida, for the purpose of packing and marketing citrus fruits. But I was requested to discuss "Florida Citrus Organization" before an assembly gathered together from every section of the United States, Canada and Europe. To consider and discuss the history, principles and practices of cooperative organizations, and to assemble and make available information concerning the cooperative movement in America and other countries, I naturally supposed I was to discuss the one big cooperative citrus organization in Florida,—The Florida Citrus Exchange.

I feel grateful to you for the privilege, and honor, of appearing on this program to represent Florida and discuss with you its largest cooperative marketing organization—The Florida Citrus Exchange.

Like all cooperatives are, or should be, the Florida Citrus Exchange with 6000 members, 20 sub-exchanges and 123 associations, is a child of necessity. Organized because of an acute economic need, cooperative marketing as a rule has been the outgrowth of an economic need, and in this respect the Florida Citrus Exchange is no exception to the rule.

In the early years of the citrus industry in Florida, oranges were considered a luxury and as such commanded fair prices. Cultivation, spraying, fertilization, packing and shipping costs were lower and glutted markets were practically unknown. Growers could pick, pack and ship their fruit independently, and as the demand was strong and the supply limited every grower could make some money.

By the year of 1893-94 the production of citrus fruits had increased in Florida to 5,000,000 boxes. Then came the freeze of 1894-95 and the average annual production for the following eight years was less than 350,000 boxes.

So we had only 350,000 boxes of citrus fruit in Florida to distribute among 75,000,000 people in the United States, or one box for every 219 people. But, by the season of 1909-10, our production had increased to 6,100,000 boxes, and the population of the United States was 92,000,000. So in 1909-10 we had a box of cit-

rus fruit for every 15 people, or in one decade our supply of citrus fruit in proportion to the number of available consumers had increased 1400 percent. Florida citrus growers found themselves with 6,100,000 boxes of fruit for which they received \$8,170,000, or \$1.34 per box. Realizing that they must broaden the market, increase the demand and widen the distribution of this rapidly increasing volume of citrus fruits if the industry was to yield any profit, farseeing men identified with the citrus industry organized the Florida Citrus Exchange.

It had to make the same fight that all economic reforms have made against prejudice, scepticism and self-interest.

It was affected, as all cooperatives are, by lean years that brought in members and prosperous seasons that resulted in back-sliders.

In some instances perhaps it was oversold, and in others it was unjustly criticized.

Like all human endeavors it made mistakes. It could not do the impossible, nor perform miracles.

It was subject to the disease germs of suspicion, selfishness, disloyalty, inefficiency, dishonesty and unfair criticism, from which all cooperatives suffer.

It could not sell a poor, ungraded quality of fruit for top prices. It could not cure all of the individual ills of its members.

It could not handle an oversupply of commodities and obtain normal values. It could not raise the price of fruit beyond the limitations of supply and demand.

It was subject to the same failures on account of ignorance, misconception and inefficiency that a corporation would have been.

It could not say to all of the difficulties in the field of citrus production and distribution, from the planting of the trees to the selling of the fruit, "Be thou removed."

And it has not been able to assemble all the fruit, nor persuade all the growers to become members.

But it has come through all the diseases, accidents and afflictions incident to childhood. Has withstood the danger period in the existence of all cooperatives and has grown from a wobbling infant in 1909 to a sturdy, robust youth of 16 seasons in 1925.

During these 16 years constant changes have been made, adjusting the operations and practices of the organization to the needs, customs and progress of the trade. Changes have been made in the official family and personnel of the officers and, in the rules regulating the constitution and by-laws of the organization.

Earnest effort has been put forth to improve the quality of the fruit. To adjust the quantity and quality of fruit to the needs of the trade.

To keep its trade policies in accord with the highest ethics and standards of business. To secure the highest price for the fruit of its members.

To grade and standardize so as to meet the preferences of consumers. To possess foresight, skill, knowledge and good judgment.

To eliminate competition between different groups of growers and to stop wasteful practices. To advance Florida fruit and increase the volume of consumption.

To employ men who believe in co-operation.

To take the fruit of many growers and assemble it into one unit. To provide standards of quality and to merchandise orderly. To assemble the commodities and resources of the growers.

To make possible a well equipped grading and inspection service. To reduce the cost of marketing. To prevent the shipping of culls and green fruit. To stimulate demand by improving quality.

To feed markets and not glut them. To substitute efficient marketing for dumping. To give the producers up to date facilities for marketing and give the consumer better quality.

And to do everything necessary to economically produce, properly pack, efficiently distribute and systematically market Florida's citrus fruits.

During the sixteen years the Florida Citrus Exchange has been in operation it has endeavored to improve its methods and profit by its experiences. Some recent changes have been made.

The organization as it exists is composed of its growers, associations, sub-exchanges and the exchange. Each of these groups have a vital part in the general scheme of cooperative marketing, and each has problems that are practically its own. Yet the interests of all the departments

are so closely connected that each one is concerned about the problems and activities of the other. All things considered the Exchange and its growers are primarily interested in one thing—the greatest possible returns for their fruit.

#### The Association

The general purpose of the association is to pick, pack and load fruit in such quantities at such time and such quality and condition as to insure maximum returns to the grower, and to satisfy in the highest degree the consuming public so as to secure continued orders.

#### The Sub-Exchange

The function of the Sub-exchange and the Exchange is to market the fruit in such a manner and in such localities and to such destinations, and in such quantities as to secure the greatest returns to the grower.

Therefore, the main purpose of the association, the sub-exchange, and the exchange are identical. Their interests in every case are the same, and every factor comprising the exchange must work in complete harmony.

#### The Board of Directors

Each one of the twenty sub-exchanges is represented by a member of the board of directors, who meet quarterly.

There is an executive committee, composed of seven members of the board of directors and appointed by the board of directors, who meet semi-monthly. This committee is given full power, to act for the entire board of directors. This committee takes the place of all permanent committees. They pass judgments on all the operations and the personnel of the exchange and supervise all the other activities of the exchange. They are the supreme authority. The chairman of this executive committee is also president of the Florida Citrus Exchange.

The operations of the exchange are divided into four heads, or into four departments. The production department, under a production or field manager, is that part of the organization from the grower to the Tampa office. It is the function of this department to increase the efficiency of the operations in the field and to co-ordinate the work of the various sub-exchanges.

This department or the production manager is directly responsible for the activities of the sub-exchange managers. Responsible for the packing, grading and maintenance of shipping standards, of all fruit, delivered to the sales department. Responsible for the shipment of fruit as specified

### THE CITRUS INDUSTRY

or accepted by the association. Responsible for the economical operation of the sub-exchanges and associations. It is his duty to investigate and handle for the sales department all complaints from buyers regarding quality or condition of fruit on arrival. He is in charge of inspection of fruit. He is responsible for the proper instruction of sub-exchange managers, in the more efficient execution of their duties.

He must consult and keep in touch

with the sales department so as to determine the quantity for shipment through the various sub-exchanges during specified periods.

He must conduct research work in connection with the grower's problems and to publish all information secured, that may be helpful to the growers.

Secure the interest and cooperation of the Federal and State departments and Bureaus in the problems of the

Continued on page 28

Nineteen

## Everglades Limited

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Effective August 12, 1925

Northbound	DAILY SCHEDULE	Southbound
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12.15 pm Lv. Tampa	-----	Ar. 4.00 pm
12.51 pm Lv. Plant City	-----	Ar. 3.19 pm
9.30 am Lv. St. Petersburg	-----	Ar. 6.45 pm
1.20 pm Lv. Lakeland	-----	Ar. 2.50 pm
8.10 pm Lv. Jacksonville	-----	Lv. 9.00 am
3.05 pm Ar. Richmond	-----	Lv. 1.10 pm
6.20 pm Ar. Washington	-----	Lv. 10.00 am
7.50 pm Ar. Baltimore	-----	Lv. 6.16 am
10.00 pm Ar. Philadelphia	-----	Lv. 11.25 pm
12.25 am Ar. New York	-----	Lv. 12.30 am
7.56 am Ar. Boston	-----	Lv. 6.30 pm
7.40 am Ar. Pittsburgh	-----	Lv. 11.20 pm
7.25 am Ar. Buffalo	-----	Lv. 7.45 pm
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## Atlantic Coast Line

THE STANDARD RAILROAD OF THE SOUTH

# Grower Sales Company Organized

A marketing system for Florida citrus fruits whereby the grower and the wholesaler are put in direct touch with each other without any lost motion, is announced through the formation of the Grower Sales Company by a group of the best known fruit experts in Florida. The Grower Sales Company is headed by L. C. Edwards, former president of the Florida Citrus Exchange. Its vice-president is C. E. Stewart, Jr., for nine years business manager of the Citrus Exchange. The secretary and general field manager is J. M. Morrow, while C. M. Bly, is sales manager.

Realizing the need for a solution of the Florida marketing problem, these well known Florida men are forming a corporation which is thoroughly financed and will, in all proba-

ing which he shipped the greatest tonnage that county ever sent out. He has been identified with other well-known marketing organizations all over the state. C. M. Bly was assistant sales manager for Dr. Phillips' organization at Orlando.

Other fruit men in the state who have experience similar to the officers are to be identified with the organization and other names will be announced from time to time. The personnel of the entire company has been selected carefully from the standpoint of successful experience. Large receivers and wholesalers throughout the North are members of the Grower Sales Company. By taking these men into the organization itself, the Florida incorporators are striking at a fundamental of their method of opera-

have secured these markets. We are spending time and money to secure more of them. When we have the markets and not before, we go to the grower with definite offers. Everything will be on an f. o. b. basis. The grower assumes a hazard only so long as his fruit is on the trees. The moment it is loaded on the car he receives his money. We assume the shipping hazard. We can afford to do this because we are abolishing expensive overhead of selling organizations in the North. Our salesmen are our distributors, who are members of the organization with us.

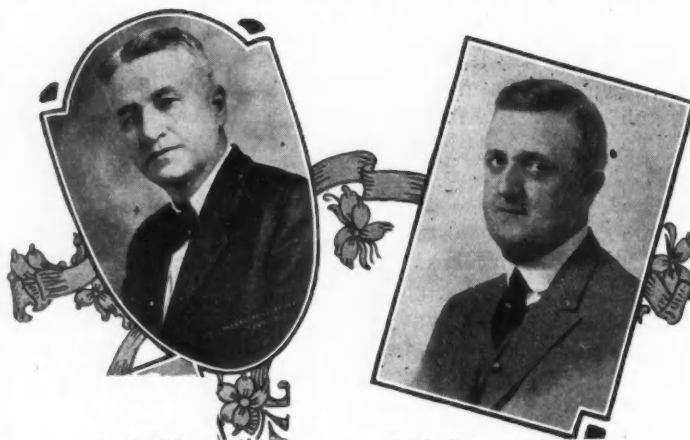
"Our whole theory is one of co-operation and not antagonism. In the past, the rule has too often been that the grower, and those representing him, abuse the receiving agent and consider him an enemy. We work on the principle that his problem is our problem. Primarily we represent the grower, but we work for full harmony between him and the wholesaler. We protect the wholesaler in his own territory by giving him the exclusive sale of a particular brand. We agree to supply him with that brand in the exact quantity which he can dispose of. We assist him in his marketing and advertising so he can give us more f. o. b. orders for our growers.

## F. O. B. Orders Guaranteed

C. E. Stewart, Jr., who has perhaps more than any other man, made an extensive study of marketing conditions for Florida fruit during the past twelve years, made this statement regarding the Grower Sales Company.

"Our charge to the grower will be a service charge rather than a selling fee. We will obtain for him full marketing information and secure for him positive distribution. We will give him definite f. o. b. orders and we will not take his fruit unless we have a place for it. If conditions are such that there is no such market, then it is unwise for the grower to ship.

"Our customers are members of our organization and we ship only on definite orders from them. We will sell individual brands and not a trade mark. Our methods eliminate expensive organizations in the North. In brief, we bring a definite, specific



L. C. Edwards

C. E. Stewart, Jr.

bility, be a million dollar concern. All the officers are entirely familiar with marketing conditions in this state, due to years experience. Mr. Edwards has just completed a year as president of the Citrus Exchange during which he gave the Citrus Exchange his closest attention and brought to it years of successful experience in marketing his own product.

## Veteran Fruit Marketer

C. E. Stewart, Jr., has devoted the past twelve years to the marketing of citrus fruits. For the past nine years he has been the active business manager of the largest co-operative marketing association in the South. J. M. Morrow who will be active field manager, as well as secretary, was sub-exchange manager for Pinellas County last year, dur-

tion, which is to be complete co-operation between market and grower.

## Principle of Operation

The basic principle on which the Grower Sales Company will operate was expressed by L. C. Edwards, president of the organization.

"I believe we have found a solution of the marketing problem for Florida growers," Mr. Edwards said. "We are lining up the markets first, and by this I mean specific markets for each car of fruit we will send out. By enlisting the co-operation of the wholesaler, we are bringing the market to Florida. We call this co-operation plus.

"Experience has taught a number of successful growers that a definite market for a particular brand is the ideal solution. We have gone out and

market direct to the grower."

The plan of the company is to keep the market in balance. As it increases its outlet in the North, it will accept fruit to fill these orders. The primary principle of the Grower Sales Company is not a new one. It has been successfully tried by a number of well-known individual growers in the state. This is the first time the principle has been applied by a statewide organization. Men behind the Grower Sales Company are backing the enterprise with their time and money. They believe they have found the solution for co-operative marketing in this state.

The Grower Sales Company will not engage in any competitive campaign with other marketing organizations. It proposes to build its own business and supply the demand it creates. The company is perfectly willing to subscribe at any time to a state-wide advertising campaign of Florida fruit as such. However, it has completed its own arrangements to advertise

## THE CITRUS INDUSTRY

fruit in the local field and in the North where its wholesalers are located.

### TAMPA'S NEW MORNING DAILY TO START BEFORE OCTOBER FIRST

Continued from page 17  
after the Tribune was sold, they began preparations for the new publication.

Equipment for one of the most complete and modern newspaper plants in the South, has been purchased, some of it already has arrived in Tampa and is being installed.

Full leased wire service of the United News and United Press, one of the greatest news gathering organizations in the world, has been obtained by the new daily, together with a widely assorted and most carefully chosen selection of the country's best feature services.

The building formerly known as the Knights of Pythias Hall, at Lafayette and Morgan streets, has

been leased for the new newspaper plant and work of remodeling it has been practically completed.

It is planned to issue the first number of the new publication not later than October 1.

A complete corps of circulation, news and advertising men, as well as complete forces in all of the mechanical departments, have been engaged.

Included in the mechanical equipment which has been purchased are fifteen of the newest and latest model linotype machines, a battery of monotype machines, a fine sextuple super-speed Hoe printing press capable of printing 36,000 papers an hour, one of the most modern stereotyping plants in the South, and a thoroughly modern composing room equipment of the latest high grade quality, including all steel type frames, cabinets and make-up tables, and virtually every other modern mechanical device known to the printing trade.

Twenty-one



## SKINNER ROLLER DUMPING BELT

The Skinner Roller Dumping Belt provides a short cut from the field box to the soaking tank or sprinkler elevator.

Enables unloading operations to go on from several receiving doors without congestion.

Speeds up packing operations by quickly getting the fruit from the field box into the packing line.

Also enables fruit in storage in the field box to be worked out with the least possible handling costs.

Dumping belt can be made any length desired to take care of any capacity plant.

Another very important advantage gained by use of

roller dumping belt is the thorough removal of all leaves, sand and trash that are found in every field box. It keeps these out of the brushes, the washer does a more thorough job and keeps the tank sanitary.

Sometimes we provide a conveyor belt over the dumping belt to carry the empty boxes away when dumped, delivering them to the storage platform or any other convenient place.

The Skinner Roller Dumping Belt saves so much hand labor and delivers the fruit in so much better shape than is possible otherwise, that any packing house regardless of capacity should have one installed. It will pay for itself very quickly.

Well made, durable, trouble proof, inexpensive.

There is a Skinner Labor Saving Machine for Every Packing House Need



## Skinner Machinery Company

World's Largest Mfrs. Packing House Equipment.  
Mfrs. Skinner's GAS MAKER.

48 Broadway

Dunedin, Florida

## Soil Moisture Studies In Relation To Diseased Tree Conditions In Brevard County

Continued from page 9

in an air-dried state an irregular rise resulted. In one soil now under observation the extreme condition obtains. The moisture has raised 14 1/2 inches in the soil moistened to 1 1/2 percent, and only 5 inches in the column containing the air-dried soil—both samples from the same composite material. This would indicate that the initial moistness of the soil will influence the re-wetting of the soil after it has dried out to a certain extent. That the limited range of capillary movement appears in the field will be substantiated by the following record. The water descended the trunk of the tree and then followed a slight depression (about 1 inch deep) to the water furrow. The centre set of samples was taken in the centre of the water course; the others to right and left, 18 inches from the centre. Norfolk soil taken 24 inches from tree.

Depth (inches)	Total moisture			Right 18 inches
	Left 18 in.	Centre	Right 18 inches	
6	2.1 percent	7.6 percent	6.7 percent	
12	6.6 percent	8.0 percent	2.7 percent	
18	2.1 percent	7.8 percent	2.1 percent	
24	2.4 percent	8.6 percent	2.1 percent	
30	2.9 percent	6.5 percent	2.3 percent	
36	3.9 percent	—	3.5 percent	

It is known that the soil moisture content can be so reduced that there will be no capillary movement of water through the soil once that point is reached, and that if the moisture is further reduced the root will become permanently affected. The point where there will be no capillary movement has been designated as the "moisture equivalent" of the soil, (or capillary equilibrium) and the point where the root becomes permanently affected is called the wilting coefficient".

These values vary with the character of soil but have the same effect on different plants and on the different ages of the same plant. It has been found that a plant will grow when there is only 2 percent of moisture in coarse sand, yet the same plant will wilt in fine sandy loam containing 10 percent of moisture. Even greater variations have been found. From this you can see the application to our Florida soils. Our organic soils will require more moisture to keep a plant from wilting

permanently than is needed in the lighter soils; and a higher moisture content must be maintained in sandy prairies than in the more sandy soils in order to secure the maximum growth. The "moisture equivalent" coefficient of any soil may be regarded as the critical point in its moisture relation, since below it there is no capillary movement of water to replenish the soil, and unless the water is forced in by gravity any root within the dry area for a sufficient length of time will become affected. That you may further understand the importance and significance of the moisture equivalent of a soil it may be stated that if two different soils having different values are moistened just to the moisture equivalent there will be no movement of moisture from one to the other even though the moisture content of one soil is 10 percent greater than that of the other.

### Prevailing Condition Affecting Free Development

In view, therefore, of the moisture equivalent values and the limited capillary action in the different soils, the irregular moisture conditions and the difficulty in re-wetting a dry soil in the area under consideration it is not surprising that there should be such a large mortality of trees. Extreme dryness will cause root injury, and if protracted will result in a complete "kill". Extreme wetness followed by extreme dryness affects the entire root system—top feeders and deep roots. Likewise, extreme variations in the soil moisture content at different depths and at different locations under the tree will influence the development of certain portions of the tree which depend upon the roots in that area for sustenance, so that with all these factors considered it is not unreasonable to suppose that there would be a physiological disturbance in the tree following the variations here presented.

See table on opposite page

"Why don't men have dens any more?"

"Because they have to spend all their spare time in the garage, and like it better."—St. Louis Globe-Democrat.

I cannot enjoin too strongly upon you a due observance of economy and frugality.—President Coolidge.

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# THE CITRUS INDUSTRY

Twenty-three

Results and Field Notes for Large 20 Year Old Seedling Tree in Norfolk Soil.  
Tree Shedding Leaves, and Twigs Dying. Slight Curl in Leaves.  
June 23, 1924

5 feet north	5 feet south
6 in. — 4.08 percent	6 in. — 4.28 percent
12 in. — 2.33 " $\frac{3}{4}$ in. live; dead feeders	12 in. — 2.70 " "
24 in. — 1.97 " $\frac{3}{4}$ in. live at 15 in., also	24 in. — 2.78 " $\frac{3}{4}$ in. live root at 20 in.
36 in. — 1.69 " (affected, and live feeders.	36 in. — 1.59 " Dry. Affected feeders
48 in. — 1.78 " "	48 in. — 1.60 " Dry. Dead feeders
57 in. — 3.21 " "	57 in. — 1.63 " "
8.5 feet north	8.5 feet south
6 in. — 7.26 percent	6 in. — 2.92 percent
12 in. — 4.14 " "	12 in. — 2.21 " "
24 in. — 1.92 " "	24 in. — 3.12 " Dry top, core bottom. Dead
36 in. — 1.79 " "	36 in. — 4.92 " (roots and also live roots
48 in. — 2.25 " Dry top, moist bottom	48 in. — 2.63 " Core, then dry. (in core
57 in. — 3.57 " "	57 in. — 1.92 " Affected roots
7.5 feet northeast	7.5 feet southwest
6 in. — 5.25 percent	6 in. — 1.78 percent
12 in. — 5.01 " "	12 in. — 2.24 " Dead feeders. light in color
24 in. — 3.82 " Dead, also live feeders.	24 in. — 2.03 " Dead feeders.
36 in. — 4.70 " "	36 in. — 1.99 " "
48 in. — 4.87 " Dead, also live feeders.	48 in. — 1.97 " "
57 in. — 5.07 " Live, and affected feeders.	57 in. — 3.01 " "
5 feet east	5 feet west
6 in. — 2.38 percent	6 in. — 3.55 percent
12 in. — 2.17 " Dry. Dead $\frac{1}{4}$ in. root	12 in. — 2.37 " "
24 in. — 1.84 " Dry. Live 3-16, dead 1-16 in.	24 in. — 1.99 " Dry. Dead feeders
36 in. — 1.70 " Dead feeders	36 in. — 2.06 " Dry, then moist
48 in. — 1.79 " Dry, moist, then dry	48 in. — 2.09 " "
57 in. — 1.86 " "	57 in. — 2.90 " Moist no roots.
10 feet east	10 feet west
6 in. — 8.47 percent	6 in. — 2.81 percent
12 in. — 3.51 " Core to 11 in. then dry	12 in. — 2.62 " "
24 in. — 2.92 " Dry. Citrus root shell $\frac{1}{4}$ in.	24 in. — 2.35 " Dry. Affected feeders
36 in. — 1.87 " (dia. dead feeders	36 in. — 1.78 " Abundance of dead feeders
48 in. — 1.83 " Dry top, core bottom	48 in. — 1.77 " "
57 in. — 1.60 " More dry.	57 in. — 1.77 " "
7.5 feet southeast	7.5 feet northwest
6 in. — 2.74 percent	6 in. — 2.64 percent
12 in. — 2.14 " Dry. Dead feeders	12 in. — 2.25 " "
24 in. — 2.19 " Dry. Dead, and live feeders	24 in. — 1.92 " Dead and live feeders
36 in. — 1.68 " Dry. Affected feeders	36 in. — 1.95 " Dry top, moist bottom
48 in. — 1.58 " Dry top, more moist bottom	48 in. — 4.61 " "
57 in. — 2.35 " Old, dead feeders	57 in. — 5.31 " "

NOTE: In analyzing this record it must be considered that the result shown is an average of the moisture in the 6 or 12 inch soil column, and that one part of the column may be either more dry or more moist than the figure given. For instance take the 36 in. depth at 5 feet west—2.06 percent in section, but notes state dry, then moist; consequently there must have been less than 2.06 in the top, therefore the moisture content was near the critical point, and would affect any root in it.

Results and Field Notes for Large Orange Tree About 12 Years Old in Gainesville Sandy Loam. Leaves Becoming lighter in Color. North-east Side Frenching. Southeast Side Curling Most, Although Curl all Over. No Growth. Top Dry. July 1, 1924 3 in. Rain in May, 4.54, in June 1.49 in. on 23rd.

5 feet north	4.5 feet south
6 in. — 3.04 percent	6 in. — 2.24 Percent Dry. Dead $\frac{1}{4}$ in. roots
12 in. — 4.49 " "	12 in. — 2.87 " "
24 in. — 2.95 " "	24 in. — 3.27 " "
36 in. — 2.11 " "	36 in. — 3.55 " "
48 in. — 2.05 " "	48 in. — 2.41 " More dry,
57 in. — 3.88 " "	57 in. — 6.93 " "
9 feet north	9 feet south
6 in. — 1.98 percent	6 in. — 4.53 percent
12 in. — 1.41 " "	12 in. — 1.68 " "
24 in. — 1.59 " Dry 9 in. then moist	24 in. — 2.08 " "
36 in. — 2.20 " "	36 in. — 3.34 " "
48 in. — 1.35 " Moist, then dry 6 in.	48 in. — 2.89 " "
57 in. — 1.64 " "	57 in. — 6.19 " "
7.5 feet northeast	7.5 feet southwest
6 in. — 2.69 percent	6 in. — 2.41 percent
12 in. — 2.66 " "	12 in. — 2.17 " "
24 in. — 3.15 " "	24 in. — 2.96 " "
36 in. — 3.95 " "	36 in. — 3.28 " "
48 in. — 6.36 " "	48 in. — 2.89 " "
57 in. — 11.55 " "	57 in. — 3.13 " "
5 feet east	5 feet west
6 in. — 2.13 percent	6 in. — 4.41 percent
12 in. — 2.53 " "	12 in. — 3.24 " "
24 in. — 2.78 " "	24 in. — 3.48 " "
36 in. — 3.37 " "	36 in. — 3.22 " "
48 in. — 1.48 " Dry last 6 in. Affected	48 in. — 3.14 " "
57 in. — 2.80 " Sand clay, crumbly (feeders	57 in. — 3.91 " "
9 feet east	9 feet west
6 in. — 1.88 percent	6 in. — 2.96 percent
12 in. — 2.67 " "	12 in. — 2.76 " "
24 in. — 3.07 " "	24 in. — 2.69 " "
36 in. — 3.66 " "	36 in. — 3.58 " "
48 in. — 2.38 " "	* 43 in. — 5.18 " Rock
57 in. — 2.18 " "	
7.5 feet southeast	7.5 feet northwest
6 in. — 2.33 percent	6 in. — 2.51 percent
12 in. — 1.69 " Dry	12 in. — 1.74 " "
24 in. — 2.00 " "	24 in. — 2.75 " "
36 in. — 3.89 " "	36 in. — 3.72 " "
48 in. — " "	48 in. — 2.44 " Bottom dry. Slight red sand
57 in. — 3.93 " "	57 in. — 3.87 " Clay (clay

A Good Crop  
of Fruit,  
Fine in Quality  
and Texture,  
Will be  
Your Satisfaction  
of Using  
ORANGE  
BELT  
BRANDS  
of Fertilizer



Quality Fertilizer  
for  
Quality Fruit

# C. J. Brand to Join Fertilizer Federation

Charles J. Brand, consulting specialist in marketing of the department of Agriculture at Washington, who has been giving special attention to economic problems incident to the operation of the packers and stockyards and grain futures administrations, has been selected by the New National Fertilizer Association as executive secretary and treasurer.

Mr. Brand was born on a farm in

ural Histroy, Chicago.

## First Employed in Plant Industry

Mr. Brand first came to the department in 1903, appointed as a scientific assistant in the seed laboratory. A few years later, when in charge of clover and alfalfa investigations, Mr. Brand became interested in testing the economic possibilities of utilizing certain waste raw materials. He also assisted in organiz-

acts, and subsequently administered those laws. As a member of the war emergency agricultural conference at St. Louis, April, 1917, he assisted in preparing the foundation draft of what later became the food control act.

During the war Mr. Brand was chairman of the committee on cotton distribution, a member of the wool advisory committee, liquidating officer by appointment of the President to collect and distribute excess profits under the regulations, and representative of the Secretary of Agriculture on the first price-fixing committee of the Council of National Defense.

## With Marketing Organization Three Years

In 1919 Mr. Brand resigned from the department and for three years was vice president and general manager of the American Fruit Growers (Inc.), with headquarters at Pittsburgh. At the invitation of Secretary Wallace he returned to the department in 1922, where he has been serving as consulting specialist in marketing to the Secretary of Agriculture and has worked on economic problems in connection with the packers and stockyards and grain futures administrations. This is his present connection.

Mr. Brand is a member of the American Economic Association, the Washington Academy of Science, the honorary scientific research fraternity, Sigma Xi, the Cosmos and Chevy Chase Clubs, and numerous other organizations. For several years he was a member of the executive committee of the bureau of personnel research, Carnegie Institute of Technology, Pittsburgh.

The New National Fertilizer Association is a combination of the two previously existing associations, one occupying the southern and one the northern and western fields. The executive headquarters of the association will be at Washington, D. C., and branch offices will be maintained at Chicago and Shreveport. Under the direction of the president of the executive committee Mr. Brand will supervise such activities of the association as soil improvement work, cost accounting, traffic activities, improved trade practices, standardizations, and public relations. He entered upon his new duties on August 1.



Charles J. Brand

Minnesota and received his early education in that State. While preparing for college he taught in the graded and country schools of South Dakota and Minnesota. In 1898 Mr. Brand entered the University of Minnesota, from which he was graduated four years later, having held a university scholarship in botany in 1901-2. Following his graduation, he was for a short time assistant curator of economic botany, Field Museum of Nat-

ing the first cooperative cotton enterprises and in establishing the Arizona-California long-staple cotton industry.

Mr. Brand headed the Bureau of Markets from 1913 to 1919, when he resigned, and during this time it grew to be an important bureau of the department. He assisted in and supervised the drafting of the United States cotton futures, grain standards, warehouse, standard container, food products inspection, and other

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# CITRUS COMMENTS

BY

**R. E. Lenfest, Manager Horticultural Department  
Orange County Citrus Sub-Exchange, Orlando**

## Young Trees—Late Summer Fertilization

For many growers the month of August is the time for fertilizing young trees. When trees are in normal condition with no dieback growth or frenching present this is a very good plan. If the dieback or frenched condition is serious skip this application and use one-fourth to one-half pound of bluestone per tree. In using the bluestone be sure to scatter it evenly and not too close to the trees.

Where the young trees are normal it is simply a matter of looking them over carefully as to color and general growth conditions in order to determine the amount and analysis to use at this time. In general a 4-8-3 with half of the ammonia from organic sources will fill the needs of the young trees. Where the growth has been a little extra vigorous it may be advisable to use a 3-8-5 having the same sources of ammonia as suggested above.

As to the amount, a general suggestion would be to use at least as much as at the last application. Quite often the trees can handle a slight increase of a high quality fertilizer. Be sure that the fertilizer is scattered carefully, not too close to the trees and out to a distance just a little beyond the average extent of the roots. Dig around some of the trees so that you will really know

how far out the roots have grown.

Continue the tree row cultivation of the young trees and do not allow grass to grow close to the trees inside the cultivated strips.

Keep the root sprouts cut off so that no growth will be wasted. Any further pruning should be limited to the removal of sprouts that come out close to the ground.

## Watch for Harmful Insects Particularly Rust Mites and Scales

The summer months are commonly considered the vacation months but to the up-to-the-minute citrus grower there is no vacation time. True, he may get away for his annual play time by leaving someone else in charge, or he may have had all the important work caught up so that he feels safe to get away for a short time. If he leaves the grove with no one to watch things till he returns one of his big worries is likely to be, whether or not the rust mites will damage the fruit while he is away from the grove.

This present season the rust mites have not run exactly according to schedule. They appeared early in the summer but as a rule did not increase as rapidly as was expected. It is not a good plan to neglect to watch for the rust mites just because they have not been very numerous so far. They should be looked

for regularly every ten days or two weeks up to about the time the fruit is to be picked.

Whenever the rust mites are found and it is necessary to check them it should be done with liquid lime-sulphur or by the use of very fine sulphur dust. Whatever method is used a very thorough job should be done. Be sure to cover the leaves and tender twigs as well as the fruit. If the dust is used the plan of following the first dusting with a second about six to eight days later will be more nearly certain to give protection over a longer period of time. The dust should be thoroughly applied at both times. The object of the second dusting is to kill all the rust mites that were in the egg stage at the time of the first dusting but hatched during the six to eight day period. The price being offered for fruit to be picked this coming season is such as to justify taking good care of every bit of fruit we have.

While making the rounds regularly to keep track of the rust mites the presence of scales should be looked for. If the Red Scale is at all numerous it should be cleaned up at once by a thorough spraying with a good acid emulsion at a strength of 1-50. A second spraying may be needed a few weeks later if the infestation was very severe.

The purple scale does not do its damage so rapidly as the red scale except on tangerine trees. It is hard-

Continued on page 32

## THE ANGE BILT

**Orlando's Most Distinctive Hotel**

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**Excellent Dining Room Service 10th Floor**

**"The Height of Hospitality"**

**Orlando, Florida.**

**Arthur F. Landstreet, Manager**

## CAN CORPORATE MARKETING SOLVE THE FARM PROBLEM?

Continued from page 11

to foreign countries. Large amounts have been spent on advertising the Blue Goose trade mark. Today the American Fruit Growers Incorporated, with an annual business of approximately 40,000 cars, representing a value of over \$35,000,000.00, is recognized as meeting the essentials of national marketing, in that it standardizes the product in the growing, grading, and packing, and ships it to the entire home and foreign market under a consumer advertised trade mark with regularity throughout the season. Blue Goose products may be found in all markets, large and small, of the United States and Canada, and in European countries, practically every day in the year.

The enterprise has proceeded conservatively, without attempt at rapid growth of volume, but rather undertaking to demonstrate the proper method by which fruits and vegetables may be distributed for the mutual benefit of producer and consumer. Many of the smaller successful marketing factors of the country are recognizing the necessity and advantage of organization along the lines followed by the American Fruit Growers Incorporated, and it is contemplated that, in line with other industries, the important fruit and vegetable industry will, from this time forward, steadily organize in large and more efficient units, not only for the relief of the producer, but for the better supply of the market of the country with the same efficiency that it is supplied with milk.

Perhaps the best illustration and test of the methods of the American Fruit Growers Incorporated, is to be found in the sale of grapefruit on the New York market. A minimum supply of three cars per day, with a general average of five cars, is furnished New York throughout the season. This trade-marked fruit, sold at auction in active competition with fruit of other brands, averages throughout the season are substantially higher than competing fruit. This difference represents, we believe, the actual value of Blue Goose methods and the Blue Goose consumer advertised trade mark.

New York consumers, and consumers throughout the country, and in Great Britain, call for Blue Goose grapefruit as they would call for Heinz pickles or Knox hats. This facilitates ordering over the telephone; it insures the retailer and jobber a

## THE CITRUS INDUSTRY

quick turnover. The cost of freight, boxes, paper, and labor is just the same as for a similar product under unadvertised brands, yet you will notice a marked difference per box on the prices realized for Blue Goose as against the highest prices realized by competitors. On the New York market practically all Florida grapefruit is sold at auction, so that an accurate test can be made. This simply means that the consumer will willingly pay a higher price for fruit which is identified by a trade-mark just as in the case with other lines of merchandise. Under permanent high costs of labor, package and

transportation, it becomes necessary for the producer to standardize, grade, and ship his product under a consumer-advertised brand in order to survive. To do otherwise is economic waste.

The American Fruit Growers Blue Goose program calls not only for a strictly first-class perishable product, delivered in good condition to the ultimate consumer through the regular channels of trade, but it requires an adequate daily supply being furnished. The planning of regular daily supplies of perishables, shipped thousands of miles, is a nice problem.

Continued on page 34

Twenty-seven



## Statement of Condition

June 30, 1925

### RESOURCES

Loans	\$10,278,428.91
U. S. Bonds	1,593,292.10
Municipal and Corporation Bonds	1,183,966.65
Stock in Federal Reserve Bank	28,500.00
Banking House, Furniture and Fix.	333,751.57
Other Real Estate	119,200.00
Overdrafts	441.23
Cash on hand and in Banks	4,637,938.97

Total Resources \$18,175,519.43

### LIABILITIES

Capital Stock	\$ 500,000.00
Surplus and Undivided Profits	624,383.65
Interest collected but not earned	40,041.03
Circulation	204,197.50
Dividend	20,000.00
Deposits	16,786,897.25

Total Liabilities \$18,175,519.43

A. C. Clewis, Chairman  
of the Board

J. A. Griffin, President

Peter O. Knight  
Vice President

C. C. Whitaker  
Vice President

John O. Perry  
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F. Otto Anderson  
Assistant Cashier

T. G. Mixson  
Assistant Cashier

Helping to finance the marketing of the Citrus Crop is one of the important functions of this Institution.

# Exchange National Bank

"A Dependable and Responsible Bank  
for Dependable and Responsible People"

TAMPA, FLORIDA

Twenty-eight

## FLORIDA CITRUS

### ORGANIZATIONS

Continued from page 19

growers, and to publish all information secured. To be in charge of all organization work, in holding the members and securing new ones.

He is responsible for all activities not directly concerned with sales, advertising or executive operations.

#### The Advertising Department

This department is under an advertising manager, who is responsible for all forms of space advertising, such as magazines, newspapers, billboards, street cars, etc. The handling of direct mail work either with dealers or consumers. The securing of dealer display material, and folders receipt books, etc. In fact in charge of all publicity work. In charge of a house organ that will be regularly sent to growers. He is to do all that can be legitimately done to widen the channels of distribution and increase the demand for Florida Citrus fruits.

#### Sales Department

The sales manager is responsible for the handling and sale of all fruit packed by the Florida Citrus Exchange, develop markets and properly distribute all shipments of Exchange fruit, as they leave Florida.

#### Office of General Manager

The general manager is in direct charge of all the departments of the exchange, and is directly responsible to the Board of Directors and the Executive Committee. He must co-ordinate the activities of all departments, and secure as nearly 100 per cent efficiency as possible.

The Exchange has a sales organization, of about sixty men in the various markets. Twenty of these are in the Eastern division, twelve in the Mid-central division, eighteen in the Central-division, five in the Western division, and five in the Southern division.

The Exchange started its operation with a small per cent of the fruit of the State, the fact that the proportion of fruit handled by it has increased every year until now they control from 35 to 50 per cent of all the citrus fruit produced in Florida is strong proof of their worth, as a marketing organization.

Perhaps if the needs and difficulties of the growers, had been more acute, the growth of the organization would have been greater.

However, no one but a dreamer would expect a cooperative in Florida to control all the fruit. There are a number of large, efficient, honest skillful independent marketing or-

## THE CITRUS INDUSTRY

ganizations in the State, who not only serve a large number of satisfied growers, but they own a great many groves and packing houses, and of course, prefer to market their own fruit.

The Exchange has done a great work, it has rendered service and deserves to live and continue to grow and prosper. When the Exchange was organized in 1909, we had only one box of fruit in Florida for every 15 people in the United States. Today we have a box for every 5½ people in the United States.

In 1909 the per capita consumption of oranges in this country was 37, now it is around 60. When the Exchange was organized in 1909, the price of fruit per box was \$1.34. In 1924-25 the average price for Florida citrus fruits returned to the marketing agencies was around \$2.60.

The development of the industry from a production of 7,946,926 boxes in 1913-14 to 21,800,000 boxes in 1923-24 is no doubt due in a great measure, to the work of the Florida Citrus Exchange.

In closing let me say that there are approximately 260,000 acres of citrus groves in Florida, less than 20,000,000 trees and less than 12,000,000 trees in bearing. There are not more than 175,000 acres of bearing groves in the State. There is a possibility of a 20,000,000 box crop any year from our present bearing groves. There are 35 of our 66 counties that grow citrus fruits commercially, and all counties can, and do, grow some citrus fruits. If all the bearing groves were in our smallest county, there would still be 17,000 acres in the county to plant in fruit trees.

It is estimated that there are from 5,000,000 to 9,000,000 acres of land in the State that will produce some of the varieties of citrus. So it is possible for Florida to increase its production to from 30 to 50 times as much as it is now.

We ship an average of 164 car loads of citrus fruit daily, the year around now, at our present rate of increase we will be shipping 400 car loads daily, in a decade.

Of course a disaster could decrease our fruit production and at present many groves are being cut down to make room for homes for the ever increasing hosts that are coming to Florida. But with the production of citrus fruits increasing faster than the population, the best possible method of production preparation, distribution and marketing, should be put into use, and this can best be

done by organized effort and unity of action and the largest producer and shipper of citrus fruits in Florida, is the Florida Citrus Exchange.

### A. F. G. INC. TAKES OVER

#### ALVA PACKING HOUSE

Upon the dissolution of the Alva Citrus Growers Association, in Lee county, the fruit growers of that community have organized under the name of Alva Growers, Inc., and will market their crops next season through the American Fruit Growers, Inc., it was announced last week by Frank L. Skelly, Florida manager of the latter concern. The Alva Growers, Inc., will take over the packing house used by the old Florida Citrus Exchange association. Edwin Parkison, who last year was manager of the Alva association and also a director on the board of the Florida Citrus Exchange, will be in charge of the packing house in its affiliation with the American Fruit Growers, Inc., it is reported.

### MOUSER ATTENDS CONVENTION

W. H. Mouser, President of W. H. Mouser & Co. Citrus Fruit Marketing Agents, Orlando, Florida, will leave Orlando August 9th and will attend the Apple Shippers' Convention in Cleveland.

This will be the seventeenth consecutive Convention of the Apple Shippers' which Mr. Mouser has attended, and will be the first convention he has attended since resigning as Vice President and Sales Manager for Chase & Co. and organizing his own company.

### ASSISTANT VETERINARIAN

#### FOR EXPERIMENT STATION

#### UNIVERSITY OF FLORIDA

Doctor D. A. Sanders, B. S., Clemson Agricultural College of South Carolina, 1920, D. V. M., Kansas Agricultural College, 1923, has been appointed Assistant Veterinarian in Florida Agricultural Experiment Station. Doctor Sanders has had two years of research experience in the Veterinary Department of Kentucky Experiment Station. His work will be entirely research on live stock and poultry diseases, in particular "salt sickness" in cattle and Manon's eye worm of poultry.

Doctor Sanders began his duties July 1 and will work in cooperation with Doctor A. L. Shealy, Professor of Veterinary Science, of the Agricultural College.

# Florida's *new* industry

**BANANA CULTURE**—Florida's new industry is attracting nation wide attention because of the **QUICK RETURNS** and **LARGE PROFITS** to be expected from **A SMALL INVESTMENT**. Plants bear within nine to 15 months after planting.

Five-acre tracts are now available to the investing public. You can own and reap profits from this profitable new industry without care or attention on your part.

**WE PLANT AND GIVE EACH ACRE SIX MONTH'S FREE CARE** and fertilization. At the end of this period we will continue to supervise and market your crop for 15 per cent of the net crop receipts, at the owner's option.

Send for our illustrated booklet, you will find it interesting as well as instructive.



Florida's Original Banana Plantation Developers  
**Taylor-Alexander Properties, Inc.**  
WINTER HAVEN, FLORIDA

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and make it the largest best club in the state. Over 700 affiliated clubs with 1,000,000 members.

Free towing and mechanical road service. Free oil, gas and tire service. also legal advice in case of accidents.

## INSURANCE AT COST TO MEMBERS

Rates and all information free

## TAMPA MOTOR CLUB

Tampa, Florida

515 East Lafayette St.

# A Public Utility's Faith in Florida

For almost a quarter of a century the Peninsular Telephone Company has been providing telephone service to the people of South Florida.

Beginning with a modest enterprise in Tampa in 1901, it has grown to a giant of usefulness in the important and populous counties of Hillsboro, Polk, Pinellas, Manatee and Sarasota.

From a few scattered telephones in a then small town, its system has expanded to one of 36,000 telephones in eighteen communities, linked together by more than 3,000 miles of toll lines.

The growth continues by leaps and bounds.

This year alone will see a full 100 per cent increase in inside switching facilities, and a tremendous expansion of outside cable plant and toll lines.

Among other things, three complete new Automatic telephone systems are being installed in as many cities.

In such facts and figures are reflected:

1. The solid, substantial growth of South Florida;
2. The faith of this company in the future of its territory; and
3. Its determination to meet the service requirements that tomorrow's growth will bring.



## Peninsular Telephone Co.

## Big Packing House Changes Hands in Sale to Syndicate

The A. M. Klemm and Son Packing House, known as the largest independent fruit packing house in Florida, has been sold to a group of local business men and citrus growers, who will operate under the name of Winter Haven Growers, Inc. The announcement of the sale was made through the medium of the American Fruit Growers, of Orlando, and local business men who are interested in the enterprise, and who were instrumental in swinging the big deal, which involves a sum in excess of a quarter million.

### Floor Space Large

The packing house was erected in 1919, and is a two-story structure of white brick. Several years later, a large addition was built, and today the structure has more than 12,000 square feet of floor space, making it one of the largest citrus packing houses in the State. In detail the house is undoubtedly the best equipped of any packing in the State, the structure being fireproof, well lighted and ventilated with all wiring encased in metal conduits. The house has been the home of the famous Belle of Winter Haven brand of citrus fruits, which have ranked as one of the leading brands in the Northern markets. The house, since the extensive renovations of a few years ago, has a capacity of fifteen cars a day.

The former owners, A. M. Klemm and Son, are among the best known citrus growers and shippers in the State, the Klemms having been prominently identified with the citrus industry in and around Winter Haven for more than a score of years. For a number of years they conducted one of the largest citrus nurseries in the State at this place and have throughout their history controlled hundreds of acres of the choicest groves in this premier citrus section of the state.

### Shipping Record High

The house has shipped more than 200,000 boxes of fruit annually for the past several years and this record will be maintained under the new organization. All the members of the new corporation are experienced business men, many having been in the citrus business in this section for many years, and under their supervision many improvements will be made and the efficiency of the house greatly increased. The new owners

have applied for incorporation and as soon as the papers have been received a permanent organization will be effected and officers will be named. The corporation, which represents several thousand acres of bearing citrus groves capable of producing several hundred thousand boxes of fruit annually, will continue to market their product through the American Fruit Growers, Inc.

### FERTILE LANDS

#### OF WEST FLORIDA

To the man or woman who comes into Florida from the states where rich black lands abound, the sandy lands of this peninsular state look very poor. One such person was heard to remark, "This sand certainly is not suited to agriculture; it looks too poor to even raise a fight between two Irishmen on it."

Any one who holds such ideas ought to make a few trips into the interior, where great areas are being put under cultivation; the sights seen there would astonish the skeptic. The writer has had the good fortune during the past two weeks to make two trips that have been a real eye opener even to one who has for years had faith in Florida, says the St. Andrews Bay News.

The first trip was to the Round Lake section, where a drive was taken that led through thousands of acres recently put under cultivation, mostly in fruit culture. Satsuma trees set out only two years ago, now have quite a showing of fruit on them, and show a fine growth and color. Grapefruit, Japanese persimmons, grapes of various varieties, pecans, and other trees were also in culture and plantings being made, results showing as good crops as the noted Havana, Flor-

ida, district can produce.

A flourishing young nursery was seen near Round Lake, one part of which was given over to grape culture, from which—judging from appearances—many hundreds of pounds of grapes will be taken this season, although the vines are young.

When writing advertisers please mention The Citrus Industry.

## If You Want a SUPERIOR GROVE

## Plant

## Superior Nurseries

## Trees

M. J. Daetwyler's

## SUPERIOR NURSERIES

Orlando, Fla.

## Home Made Dust Sprays

Use Agricultural Gypsum mixed with insect poisons and make dust spraying practical and economical. Write today for free booklet.

THE GYPSUM INDUSTRIES  
Dept. 56 844 Rush St. Chicago, Ill.

## HOTEL HILLSBORO

Tampa, Fla.

## TOP O' THE TOWN

European Plan, Fireproof 300 Rooms With Baths

THE CENTER OF TAMPA

# Tampa Business College

The Largest All-Year College in the state offers advantages far superior to other institutions.

Established in Tampa for 35 years: Under present management (Mr. L. M. Hatton) for 27 years; Modern methods in all departments; Fully Accredited College; Open all year round; Large faculty of eight expert instructors: Fine positions for graduates.

## Diploma courses in:

Bookkeeping, Auditing, Banking, Penmanship, Commercial Arithmetic, Spelling, Bookkeeping and Calculating Machines, etc.

Secretarial Work, Shorthand (Gregg) Touch Typewriting, Office Training, Dictaphones, Multigraphing, Speed Practice.

Telegraphy, Commercial and Railway Office work, General Dispatching, etc.

These courses are so arranged that students may begin any school day, and advance rapidly.

Write, Phone or call any day for further information.

**L. M. HATTON, Master Accounts, President**

College Building on Grand Central Ave.

Phone 81-117 Tampa, Fla.

We will meet you at the Union Station.

## DUSTING SULPHUR

### FOR CONTROL OF

**Rust Mite, Red Spider, Powdery Mildew, Cotton Flea and Other Pests**

**"ANCHOR" BRAND SUBLIMED VELVET FLOWERS OF SULPHUR**

**SUPERIOR QUALITY EFFICIENT AND ECONOMICAL**

- |   |  |
|---|--|
| 1. 100 Per Cent Pure.   | 4. Strongest and Most Lasting Fuming Qualities.          |
| 2. Light and Fluffy.  | 5. Remains Longest on the Trees and Plants.              |
| 3. Extreme Fineness; Greater Covering and Spreading Properties. | 6. Does not Contain Adulterants such as Lime and Kaolin. |

Send for Booklets "The Manufacture and Relative Values of Dusting Sulphurs", "The Truth about Sublimed Sulphur"; also U. S. Gov't Bulletins "Dusting to Control Rust Mite", "Dusting and Spraying Charts, and "Control of Cotton Flea".

### STAUFFER CHEMICAL COMPANY OF TEXAS

Houston, Texas

Manufacturers and Refiners of All Grades of Dusting, Spraying and Agricultural Sulphurs

Distributors for Florida

Chase & Co., Sanford  
Hector Supply Co., Miami

Florida Insecticide Co., Apopka  
E. O. Painter Fertilizer Co., Jacksonville



"ANCHOR TO STAUFFER"

# CITRUS COMMENTS

Continued from page 26

ly likely that the purple scale works faster on the tangerines but the damaging results seems to appear in a hurry. This may be due to at least two things which are more characteristic of the tangerine type of tree than of the other varieties of oranges or of the grapefruit. The tangerine type of wood is finer and inclined to be somewhat more angular than is the other common varieties of citrus. This is particularly true of the more tender twigs and branches where the scales prefer to develop. Thus in looking for the purple scale, and other scales of similar habits, on tangerines be sure to examine closely the angles that run lengthwise of the twigs and any other places where the scales may hide.

It may seem like an unnecessary repetition to say that the spraying must be thoroughly done. This point can hardly be emphasized too often for it is one of the most important factors in getting good results. A great deal of time and expense is wasted each year due to lack of thoroughness in spraying.

Most growers use the right type of insecticide for the insect they are attempting to kill and a good deal of the spraying is done at approximately the right time. Thus it appears that the amount of good done depends quite largely on the care with which the spraying is done. The use of a little more time and material in order to get a good job will pay for itself a good many times over.

## Cut Cover Crop

The cutting of the cover crop at

# THE CITRUS INDUSTRY

least once during the summer will very often save a good deal of trouble and work later in the fall when the cover crop material is being worked in with the fertilizer and also at later workings. This is due to the fact that the growth does not have a chance to become so coarse and hard as would be the case if it is allowed to mature without mowing. The first cutting also has a chance to dry out and start to decompose before the second growth needs to be worked in. The early cutting of the cover crop is also advisable where pumpkin bugs are liable to become serious, especially in tangerine groves.

## Boosting Tangerine Sizes

It is time to begin watching the size of your tangerines and noting the rate at which they are increasing in size. If they do not seem to be sizing up as they should during August and early September it may be a good plan to try to boost them a little. The common practice has been to use a more or less heavy dose of nitrate of soda to stimulate the trees. A safer plan is to use a complete fertilizer analyzing 4-8-3 or 4-8-5 and give about half the amount used at the regular fertilizing period. By following this method there is less danger of having ammoniated and dieback tree conditions appear the following year.

## Bluestone in Late Summer

Sometimes in late summer Valencia oranges start splitting with no distinct sign of ammoniation in the tree or fruit. When this is the case the use of one to two pounds of bluestone per tree in August has resulted in decreasing the number of split fruits very materially.

# MOUSER & CO., PURCHASE NEW PACKING HOUSE

W. H. Mouser & Co., citrus fruit Marketing Agents, with main offices at Orlando, Fla., have purchased the Ozona Citrus Growers Association Packing house, at Ozona.

This packing house is comparatively new and is completely equipped with the most modern and up-to-date machinery. It has a capacity of four cars daily.

Mr. H. N. Trappnell has become associated with W. H. Mouser & Co. and will have charge of the business in the Ozona territory.

Mr. Trappnell has had twenty years experience in the Florida citrus field, having been connected for several years with West Coast Fruit Company, at Clearwater, and serving last season with Chase & Co. as General Superintendent of Grade and Pack.

Ozona is located in Pinellas County about one mile South of Sutherland, three miles North of Dunedin, seven miles North of Clearwater and nine miles North of Largo. Pinellas County Oranges and Grapefruit have a fine reputation for quality and Mouser & Co. are to be congratulated on securing this packing house in the heart of the Pinellas County citrus territory.

Scissors may be used to cut such uncooked foods as celery, lettuce, radishes, pineapples, and marshmallows. This saves time and also one's fingers.

Let the women on the farm do the work, with running water and other labor saving conveniences.

When writing advertisers please mention The Citrus Industry.

**10 DAYS FREE TRIAL - MONEY BACK IF NOT SATISFIED**

**THE NEW IMPROVED INKOGRAPH SELF FILLER**  
GREATEST VALUE EVER OFFERED

**\$1.50**

**ACTUAL SIZE**  
6 1/2" LONG  
**AGENTS WANTED**

**The Writing HEMISPHERE**

**Patent Automatic**  
14 kt. gold feed prevents clogging. Made of best grade, highly polished, hard rubber, highest class workmanship. Pocket clip attached makes it an instrument of refinement. You'll never use a fountain pen once you try an Inkograph. No complicated mechanism to clean or get out of order. **SEND NO MONEY.** Pay postman \$1.50 plus postage. Year's guarantee certificate assures absolute satisfaction. Write name and address plainly.

**INKOGRAPH CO., Inc.** 39-15 Centre St., New York

*The Perfect Writing Instrument*

Writes with ink free and easy as a lead pencil, without a miss, skip or blur. Its steady uniform flow of ink actually improves your hand writing. Won't blot, scratch, leak, or soil hands.

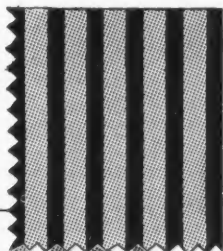
**Makes 3 or 4 Carbon Copies With Original Ink.** Anyone can write with your Inkograph, no style of writing or pressure can bend, spread, injure or distort its 14 kt. gold point.

That hard smooth round ball like point, which glides with ease over the coarsest paper and makes possible writing in ink as rapidly as with the softest lead pencil.

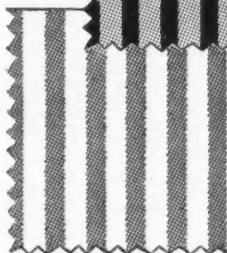
# Men! here it is

**A Neat, Genteel Cloth for Work Garments  
That Feels, Wears and Looks Right**

Morocco  
Stripe



Express  
Stripe



**Y**OU can be proud of a garment, made of Stifel's Work Cloth. It is the most refined work cloth on the market today. It comes in two neat and attractive designs, both new and up-to-date.

*The Morocco Stripe is a two-tone cloth which has a rich blue effect.*

*The Express Stripe has a rich, white background with either blue or black stripes.*

The fine construction and close weave of Stifel's Work Cloth protects your undergarments from dust and dirt and does not irritate the skin.

Garments made from Stifel's Work Cloth wear better, look better and brighter and cost less because they serve longer. Stifel's Work Cloth has been the standard for over 75 years for work clothes.

Garments made of Stifel's Work Cloth not only wear longer than ordinary work cloth materials, but the colors are fast and they can be washed at home indefinitely, which is a big economy to you.

To make sure you get garments made of Stifel's Work Cloth, look for the Boot-shaped Trade Mark on the back of the cloth. It's your protection and guarantee.

Garments sold by reliable merchants everywhere.

*Write for samples*

*We are makers of the cloth only*

**J. L. STIFEL & SONS, Wheeling, W. Va.**

*Indigo Dyers and Printers*



**Stifel's Work Cloth**  
Standard for over 75 years  
The colors won't weaken

REGISTERED U.S. PATENT OFFICE  
CANADA AND OTHER COUNTRIES.



Thirty-four

## CAN CORPORATE MARKETING SOLVE THE FARM PROBLEM?

Continued from page 27

Needless to say, our service is susceptible to steady improvement, and this improvement is going on.

The American Fruit Growers' own production represents less than ten percent of the total volume of business handled. The Blue Goose trademark is made available to growers in all parts of the country without any compensation for previous advertising expenditure, which amounts to hundreds of thousands of dollars.

The marketing service of the American Fruit Growers Incorporated, is designed particularly to please the consumer of its products. A pleased consumer will pay prices which, less a strictly economical and reasonable market charge, will pay highly satisfactory returns to the producer. It will be noted that this company furnishes a national and international marketing service for all lines of fruits and vegetables, at a marketing charge only slightly higher than the best cooperative organizations. It gives the growers the benefit of this service without the necessity of any investment in the marketing enterprise, though it welcomes the growers as stockholders if they desire to become financially interested and get the benefit of any profits accruing. We are endeavoring to make the American Fruit Growers Incorporated, a truly mutual movement, adequate to the needs not only of the struggling fruit and vegetable industry from the producers' standpoint, but serving with equal fidelity and efficiency, the consumers of the nation.

You will note that Great Britain is already organizing a government fruit and vegetable council to maintain constant supervision over stable foods, and to intervene in behalf of the consumer when prices tend to become unreasonable. We have recently experienced an era when the producers have been in distress. It is entirely possible that we will, frequently in the immediate future, be confronted with a situation where it will be recognized that the consumer of the country must have consideration also. The fact is that the permanent interests of the producer and the consumer are identical. The situation needs less quack remedies, less legislative and theoretical consideration, and more solid, economic, business-like organization and system, designed to transact the business of national and international distribution of perishable fruits and vegetables to the extent of approximately a million

## THE CITRUS INDUSTRY

carloads a year in an efficient and economical manner for the benefit alike of producer and consumer and the stabilizing of the industry.

In addition to the company's activities in improving production and marketing it makes available to the growers its purchasing power, insuring its clients the lowest wholesale prices on equipment and supplies of every sort. For instance, our purchasing department recently placed an order for forty-two cars of paper for wrapping Northwestern boxed apples.

The company is also working out, with insurance companies, the question of crop insurance, making this insurance available to the grower at a minimum cost.

As indicated in Ex-Governor Lowden's recent speech in New York, agriculture has, since 1920, been going through a terrific struggle.

Leading economists recognize that the cooperative non-profit type of organization is really benefited by having, in friendly rivalry, corporate commercial organizations. The non-profit organization, among other obvious benefits, helps to keep down the cost of marketing; the corporate organization gives industry access to public funds and insures stability, economy, and efficiency in the service rendered both producer and consumer.

Yours very truly,

[s] J. S. CRUTCHFIELD,

Pres. American Fruit Growers Inc.

## CLASSIFIED ADVERTISEMENTS

The rate for advertisements of this nature is only five cents per word for each insertion. You may count the number of words you have, multiply it by five, and you will have the cost of the advertisement for one insertion. Multiply this by the total number of insertions desired and you will have the total cost. This rate is so low that we cannot charge classified accounts, and would, therefore, appreciate a remittance with order. No advertisement accepted for less than 50 cents.

### REAL ESTATE

For Sale—Pineapple land in winterless Florida. \$15 an acre. Almont Ake. Venus Fla.

WANT TO SELL HALF INTEREST IN FIFTEEN ACRE SATSUMA BEARING GROVE ON HIGHWAY NEAR PANAMA CITY. ROBT. LAMBERT, OWNER, FOUNTAIN, FLA.

WILL EXCHANGE West Texas cattle ranch for unimproved or improved land in Florida. What have you? Give price and full particulars. T. E. Bartlett, 3410 McKinley Ave., El Paso, Texas.

EARLY BEARING Papershell Pecan trees, budded or grafted and guaranteed. Great shortage this year. Write for catalog today. Bass Pecan Company, Lumberton, Miss.

FOR SALE—Cleopatra Mandarin seedlings. September delivery, enter order now. Cavendish banana plants and avocado trees. Write for price list. R. E. Skinner, Hillsboro Hotel, Tampa, Florida. May-4t.

BANANA PLANTS for sale. Improved Cavendish, Hart, Orinoco, Ladyfinger. Information free. W. E. Bolles, Oldsmar, Fla.

### "BOOK OF TRUTH"

For planters of new groves  
Is yours for the asking,  
Write Today.

OCKLAWAHA NURSERIES INC.

"Pedigreed Citrus Trees"  
Lake Jem, Florida

FOR SALE CHEAP—Eleven acres high, rooly citrus land; 4 acres cleared with small house, and large nice bearing orange trees full of fruit. Nicely located near Altamonte Springs, Fla. For particulars write H. A. Lunquiere, 41 N. W. 29th St., Miami, Fla.

### POLK LAKE NURSERIES

Offer to the grower young trees of standard variety, backed by 30 years of nursery experience and a guarantee which only honest dealing can justify. For full information address A. H. Sloan, Box 413, Bartow, Fla.

### MISCELLANEOUS

FOR SALE—Dairy and stable manure, car lots. Link & Bagley, Box 444, Tampa, Florida.

WHITE WYANDOTT Cockrels, regal strain—the best in the country, direct from Martin pens. Utility and show birds \$5.00 each; also eggs for hatching \$5.00 per 15. W. A. King, Gen. Del., St. Petersburg, Florida.

REPOSSESSED player piano may be purchased for small unpaid balance by reliable parties on easy payments. We guarantee this player to be in excellent condition and a very unusual buy. Plenty of good rolls and bench included. M. L. Price Music Co., Tampa & Zack St., Tampa.

SOUTHDOWN SHEEP. White Rocks, Toulouse Geese, Guineas, Angora and Milk Goats, Circular free. Woodburn, Clifton, Va.

AGENTS—Quality Shoes, quick sellers. Big commissions, immediate returns! Repeat orders. Experience unnecessary. Write full particulars. Tanners Shoe, 2011 C St. Boston.

### FOR SALE

Remington Portable Typewriter with standard keyboard. Has all advantages of larger machine. Ideal for farm and home use. \$60. cash or sold on easy terms. Remington Typewriter Co., 103 Parker St., Tampa Florida.

### FARM-GROVE-HOME

22 acres large bearing grove; modern two-story, 8 room house, completely furnished on third largest lake in state in thriving town; good roads, church, school; complete line farm implements and tools. P. F. Cloonan, Yalaha, Lake County, Florida.

HIGH BLOOD PRESSURE easily, inexpensively overcome, without drugs. Send address. Dr. J. B. Stokes, Mohawk, Florida.

Laredo soy beans, considered free from nematode, excellent for hay and soil improvement. Write the Baldwin County Seed Growers Association, Loxley, Alabama, for prices.

FOR SALE: Rebuilt Band Instruments from \$5.00 up. Terms if desired. M. L. Price Music Co. State Distributors—C. G. Conn Band Instruments. Tampa.

Wanted AT ONCE few dozen fresh bitter-sour Marmalade Oranges. Price C. O. D.? M. L. Manning, 15 West Chase St. Baltimore, Md.

WANTED to correspond with growers of the Red Guava. Business. M. L. Manning, 15 West Chase Street, Baltimore, Md.

MILLION Porto Rico Potato Plants, \$2.50-1000. W. W. WILLIAMS, QUITMAN, GA.